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UNIVERSITY OF ALBERTA

ISSUES IN CORPORATE CONTROL AND THE PERFORMANCE OF CORPORATIONS

BY

© DAVID ALAN STANGELAND

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfilment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

IN

FINANCE

FACULTY OF BUSINESS

EDMONTON, ALBERTA

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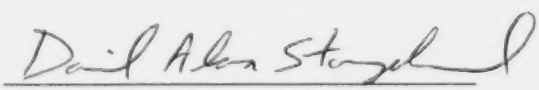

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Dr. Vikas Mehrotra

March 11, 1994

DEDICATION

This thesis is dedicated to the following:

Robert and Elizabeth Stangeland, my parents, who gave me the support I needed and fully understood what I was going through

God, who gave me wisdom, knowledge, and strength

my family, who always gave me encouragement

my friends, who stood by me through the good times and the bad times

Buffin, who was a good dog

the administration and staff of the Faculty of Business Ph.D. Program office

and, of course, my committee, especially my supervisor Randall Morck, who gave me the help and guidance necessary to complete my thesis.

Abstract

This dissertation is an empirical examination of interactions between corporate control and the performance of corporations. Because corporate control affects management/shareholder incentive alignment and managerial entrenchment, control methods and changes may affect the overall performance of a firm. Three aspects of corporate control are studied: unsuccessful takeover attempts, implementations of antitakeover devices, and alternative ownership structures. Measures of operating income, corporate growth, and corporate investment are analyzed to assess the impact of the various control features or changes. In brief, the major findings include the following: unsuccessful hostile takeover attempts have no worse results (for these variables) than unsuccessful friendly merger attempts; the implementation of antitakeover devices results in significant reductions to operating performance (with no increases in investment); and uncompetitiveness is associated with corporate control dominated by disinterested heirs of the founding entrepreneur.

Issues in Corporate Control and the Performance of Corporations

Preface

A topic of great importance, yet not fully explored, is the relationship between the control of corporations and their operating performance. An understanding of this relationship may lead to several benefits: security holders' investments may increase in value, limited resources may be used more productively, and economic growth may be generated. Analyses of forms of corporate control, methods used to attain or maintain control, and control-change events all provide different perspectives on this important relationship.

This dissertation is an empirical analysis of three aspects of the relationship between corporate governance and corporate performance In chapter one, empirical evidence on control-change events, i.e., hostile and friendly takeovers, is extended by examining takeover and merger attempts that do not come to fruition. Previous research has found benefits to stockholders and firm performance from successful takeovers. Not everyone agrees that takeover activity is socially desirable; it may be that there are costs of takeover activity that outweigh the benefits. Negative effects often associated with hostile takeovers include the following: costs associated with breaking implicit contracts, more costly explicit contracts, legal costs, and costs that result when management spends more time battling takeovers than running their firms. The study of unsuccessful takeover contests is important to determine what benefits and/or costs arise beyond the benefits found for successful contests.

197 unfulfilled takeovers are studied and variables are examined to determine effects on performance, employment and investment variables. The results are somewhat surprising. Unsuccessful hostile contests do not show the disruption to firm operations that might be expected when management is distracted while fighting a takeover attempt. There is weak evidence that measures of operating performance actually improve (relative to industry measures) following a hostile takeover attempt. This result is consistent with hostile takeovers (and threats of a hostile takeover) disciplining management. Targets of unsuccessful friendly contests exhibit significant operating-performance declines. I find evidence that may be consistent with the breaking of implicit contracts by targets of both friendly and hostile unsuccessful takeovers. However, the actions of these targets are not significantly different than the general activity occurring in their industries. The evidence from chapter one simply does not support criticisms against hostile takeover activity. In fact, since targets of hostile contests generally outperform targets of friendly contests, an implication of this study is that it may be harmful to allow management to become insulated from hostile takeover contests.

Chapter two presents empirical evidence on methods used by a firm's management to maintain control of their corporation. 900 implementations of antitakeover devices are studied. Antitakeover devices give management the ability to maintain control of their firm even though they may not own a large proportion of the firm's stock. Incentive alignment is always an issue between stockholders and their agents in the firm, managers. With small shareholdings combined with protection against takeover (and protection against job loss) are managers incentives aligned with shareholders? My evidence says no. Three measures of operating performance are examined and each changes for the

worse when antitakeover devices are introduced. Consideration is given to arguments proposing beneficial effects of antitakeover devices, but the empirical evidence does not provide support. My evidence is complementary to stock price studies that find negative abnormal returns around the introduction of antitakeover devices. The importance of chapter two's results is the removal of the possibility that the observed stock-price changes are due solely to changed expectations of takeover premiums. The implication of this study is that policies should be put in place (either by governments or shareholders) to discourage the use of antitakeover devices.

Incentive alignment between management and shareholders is the key issue when discussing takeovers and antitakeover devices. The degree of incentive alignment is also affected by the form of ownership of a corporation. Corporate ownership structure is increasingly becoming a topic of concern as competition increases with falling international barriers and as East Bloc countries privatize their industries. The third chapter[1] of this dissertation provides empirical evidence on the relationships between corporate performance and ownership structures. Canada's largest 550 firms (in 1989) are studied and compared to their American counterparts. The Canadian firms are classified according to their ownership structures. The most broad classification depends on whether or not a dominant shareholder (with holdings of 20% or more) exists for a corporation. Refined classifications are made depending on the identity of the dominant shareholder. We find the large Canadian companies tend to be younger and smaller than their American counterparts. There also tends to be a higher frequency of firms run by founders or heirs of founders.

---

[1] co-authored with Randall Morck

Three measures of operating performance are examined. Our findings indicate that widely-held Canadian firms perform about as well as their American counterparts. The performance of the closely-held firms depends on the identity of the dominant shareholder. Firms with founders as their dominant shareholders tend to grow significantly faster than their U.S. rivals but do not perform significantly differently in terms of profitability. Heir-run firms do not exhibit high growth levels and have inferior profitability margins relative to the U.S. industry comparison sets. In effect, they are clearly worse. We find weak evidence that the use of dual-classes of stock by large shareholders allows for higher growth and lower profitability than the U.S. counterparts.

The performance results and corporate ownership data are, to some extent, consistent with Canada having a smaller and younger economy than the U.S.. The more entrepreneurial aspect of the Canadian economy does not warrant concern. However, the results for heir-run firms indicate a possible competitive disadvantage of Canada relative to the U.S.. In the U.S., antitrust policies have led to a dispersion of control; perhaps the results point to a change in Canada's policies toward competition and concentration of corporate ownership.

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Chapter 1: Unsuccessful Takeover Attempts and the Effect on Target-Firm Operating Performance

1.1 Introduction and Summary

The 1980's saw high levels of corporate control transactions. During this time, nearly 25,000 announcements of mergers and acquisitions occurred[1]. Accompanying this activity has been increasing criticism of takeovers -- especially hostile ones. Corporate executives, the mass media, and legislators have all joined the rally against hostile takeovers and the raiders who conduct them. Many studies have documented the effects of successfully completed takeovers however a gap in the takeover evidence still exists. The purpose of this chapter is to partially fill that gap by examining the effects of takeover activity that does *not* result in the combination of the bidder with the target[2]. I examine the effects on corporate operating-performance, employment, and investment variables to provide evidence for gains or losses caused by unsuccessful takeover activity[3]. Two questions are addressed in this chapter. One, how do unsuccessful hostile

---

1 Source: Merger and Acquisition Sourcebook, 1990 & 1991 editions. Total number of merger and acquisition announcements in the U.S. was 24,699. Announcements per year were highest in 1986 with 3,336 announcements.

2 From this point forward, both hostile takeovers and friendly mergers will be referred to jointly as contests, acquisitions, or takeovers. Those that do not result in the bidder acquiring the target will be referred to as unsuccessful contests, unsuccessful takeovers or unsuccessful acquisitions.

3 Stock price reactions are not examined in this study. Many other studies (discussed later) have already documented the stock market reactions to unsuccessful takeovers. Some (Malatesta and Thompson [1985], Healy *et al* [1990]) argue that stock price changes may be difficult to interpret because they may reflect real value changes occurring within the corporation or they may be related to actual or anticipated premiums that are paid at the time of a takeover -- even if a takeover contest is unsuccessful, prices may change if there is a change in the market's perception of future contests occurring.

contests and friendly negotiations[4] affect these variables? And two, does this evidence support the criticisms to which hostile contests have been subject? The most notable results from these unsuccessful contests are a significant decline in operating performance of targets of friendly contests and a lack of change in performance of targets of hostile contests. Other effects are observed, but, for the most part, the results for the hostile contests are not significantly different from the results of the friendly contests. These results, combined with empirical evidence from other studies, indicate that the criticisms against hostile takeovers may largely be unwarranted.

Chapter one continues with a description of the specific variables studied. Alternative interpretations of changes in these variables are explored. Data collection and sources are described in the subsequent section. Next, I present the methodology used to measure the variables and their changes. Empirical results follow. Finally, the results are interpreted in the context of the available theories and empirical evidence on corporate control.

1.2 Variables

Two operating-performance variables are examined in this study: operating income and net operating cash flow. Each is expressed as a ratio (to assets or sales) and then adjusted for industry effects. Definitions of the operating performance variables are found in table 1-1. Operating income differs from net operating cash flow in that the

---

[4] Hostile contests are defined by the following sequence of events: the bidder expresses interest in acquiring the target, the initial reaction of the target board is negative, the bidder pursues acquiring the target against the wishes of the target board. Friendly contests are characterized as follows: either the bidder or target board instigate merger negotiations, both parties agree to negotiate, the bidder does not pursue acquiring the target if the target ends negotiations.

latter also has capital expenditures (not an expense normally charged against income) deducted. The interpretations of these variables follow. Operating income measures the before-tax cash[5] generated by the operations of the firm's current real investment projects. Net operating cash flow, like operating income, also measures the before-tax cash generated by the firm's current real investment projects but, in addition, net operating cash flow accounts for cash necessary for reinvestment for the future.

The ratios of these measures to assets or sales provide returns on assets or returns on sales. These types of returns are often used to measure the performance of firms. While increases in these variables are usually associated with improved performance, they are not always associated with an increase in the value of a firm. For example, if a firm invests more in research and development, then the current values of these performance measures will decline. (This is because R&D is an expense that is deducted from current income.) The change in firm value will depend on the relative market values of lost current cash flows versus expected future cash inflows. A deterioration in performance not mitigated by some change that increases expected future cash flows would almost certainly cause a decline in the value of the firm. These variables are calculated before and after the unsuccessful takeover attempt in order to determine if and how they change. Calculations of these variables are also conducted for the time of the event to determine whether the event is particularly disruptive.

The 1980's saw a dramatic increase in the use of debt financing -- particularly

---

[5] Operating income is not exactly the same as before-tax cash generated from the firm's operations. The two will differ when the firm's working capital changes.

around takeover events. Measures that attempt to assess performance or change in performance of firms' investment projects should not suffer the problem of being influenced by changes in capital structure.[6] Because operating income is measured before interest expenses and taxes, the operating-performance measures used here are not subject to this problem.

Another problem with operating-performance variables is that they are not always comparable from one firm to another. If the firms are of different sizes or in different industries, then it is not clear that they should have the same kind of operating income or net operating cash flow. The size problem is largely eliminated by dividing these variables by assets or sales. The industry problem is addressed by measuring a firm's ratio relative to its industry ratio. Thus, one firm will not receive credit for a performance change if its entire industry is simultaneously experiencing the same change.

Four other variables in addition to the operating-performance variables are also examined. These include the number employees, pension and retirement expenses, research and development expenses, and capital expenditures. Five methods are used to present changes to these variables. First, the changes in the four actual variables are determined. Next, the changes in the variables as ratios of assets or sales are calculated.

---

[6] One method to find evidence of financial restructuring is by observing sales and purchases of stock as a percent of assets or sales (both unadjusted and industry adjusted). In the year prior to the takeover contest, targets of both friendly and hostile contests do not purchase or sell stocks in a manner significantly different from their industries or one another. However, in the year of and the year following the contest, targets of hostile contests tend to purchase a significantly larger proportion of stock than both their industries and the targets of friendly contests. The difference in purchase behaviour between targets of hostile contests and targets of friendly contests is present for both unadjusted and industry-adjusted variables. In the year of the contest, differences of means and differences of medians between targets of friendly and hostile contests are significant at the 1% level.

Finally, the changes in the two ratios (variable/assets or variable/sales) relative to industry ratios are presented. These variables are summarized in table 1-1. Why the different presentations? The answer is that each gives a slightly different interpretation. Suppose we are concerned about job loss. For the purpose of illustration, observe how the five presentations give different interpretations. A decrease in the employee number means that fewer individuals work for the firm. However, no one necessarily lost a job. If the firm sold off a division and a number of employees went with the division, then no job loss took place. To account for the possibility that firm size might decrease, I examine the number of employees scaled by firm size (either by assets or sales). The problem with the scaled employee variables is that they may show negative changes if the firm size increases (even if no one loses a job). Only if both the actual employee variable and the scaled employee variable drop can I be reasonably sure that someone was fired. The industry adjusted variables do not indicate whether job loss occurred, however they are useful because they show how a firm's labour usage is changing relative to the industry patterns. Because we are interested in actual changes and relative changes to each of the four variables, each is presented in the five ways as described.

Why are these four variables examined? Each is linked to alternative hypotheses regarding the effects of takeovers. Decreases to the employment variables (number of employees and pension and retirement expenses) are often cited as evidence (see Shleifer and Summers [1988]) of firms breaking long-term implicit contracts. These variables only give partial evidence. From these variables we cannot determine whether long-term employees are now receiving rents in the form of salaries or benefits in excess of their

marginal product. If they are not receiving rents, then are there implicit contracts? Layoffs and/or pension reductions may not be motivated by breaking implicit contracts; they may simply result from changes in production requirements or processes.

Other stories are told about research and development expenses and capital expenditures. On the one hand, Jensen (1986) argues that firms with free cash flow may over invest in R&D and capital expenditures. These overinvestments may represent negative NPV projects; thus decreases in R&D and capital expenditures may provide evidence of an improvement in the management of the firm's resources. On the other hand, management often argues that a myopic stock market does not adequately value the distant cash flows to be generated by current R&D or capital expenditures. Thus, because they are trying to avoid takeover, they wrongly cut these investments that would otherwise prove to be beneficial.

As can be seen from the above, there exist alternative explanations (many more than are presented) for changes to any of these variables. While the validity of these explanations is an important question, the focus of this study is first to determine if and how these variables change and then to determine if there are systematic differences between friendly and hostile contests. If differences exist, then the explanations must be explored further to determine whether hostile takeovers warrant the criticism that they have received.

1.3 Data

A sample of unsuccessful takeover contests is collected from the time interval 1980-1988 inclusive. Sources identifying the sample of contests are *The Merger and*

Acquisition Sourcebook, and W. T. Grimm and Co.'s *Mergerstat Review*. Information regarding the nature of each contest is obtained from the above two sources and *Predicasts F&S Index of Corporate Change*, *The Wall Street Journal Index*, and *The Wall Street Journal*. Additional data (regarding shareholdings of officers and directors) is obtained from *Spectrum*. Financial data for the corporations is obtained from *COMPUSTAT*. Retained in the sample set are only those firms for which some of the *COMPUSTAT* data exists. This leaves a total of 197 unsuccessful contests. Of these, 89 are hostile and 108 are friendly.

The non-financial data variables collected can be subdivided into two categories: characteristics of the contest, and characteristics of the target firm. Table 1-2 summarizes the non-financial variables and their sources.

Financial data (from *COMPUSTAT*) are collected for firms and their industries. A firm's industry is determined by the first three digits of a firm's standard industrial classification (SIC) code. Since SIC codes may change through time (as firms move from one industry to another) special attention is given to whether or not the SIC code reported at the time of the takeover attempt is the same as the most recent SIC code recorded for the corporation. 4-digit SIC codes (a finer classification scheme than 3-digit SIC codes) often change over the time span studied but 3-digit SIC codes do not. Industry aggregate variables are obtained by summing the relevant *COMPUSTAT* 4-digit SIC industry aggregates to create 3-digit industry aggregates. Industry aggregates are adjusted to exclude a particular firm's data if that firm is being compared to the industry. The raw financial variables and their sources are described in table 1-3.

1.4 Methodology

To determine takeover contests' effects on and relationships with the operating-performance and other variables, pre-contest, year-of-contest, and post-contest versions of each variable are calculated. All operating-performance variables are adjusted for industry affects by subtracting the equivalent industry variable. For pre- and post-contest variables, up to three years data (if available) prior to or subsequent to the contest is used. The pre- or post- contest variable is calculated by taking the sum of the variables (industry adjusted if appropriate) prior to or subsequent to the contest and dividing by the number of years for which the data is available. The year-of-contest variable is simply the variable or the industry adjusted variable where appropriate.

The final variable calculated is the difference (or change) between the post-contest variable and the pre-contest variable. This value is simply the post-contest variable minus the pre-contest variable. The difference of a variable measures how the variable has changed in response to the unsuccessful takeover contest.

Two types of statistical analyses are performed on the operating-performance variables. The first analysis consists of a series of cross-sectional (across contests) regressions (OLS). The dependent variables for the regression equations are as follows: pre-contest industry adjusted operating-performance variable, post-contest industry adjusted operating-performance variable, and difference in industry adjusted operating-performance variable. Since there are a total of four industry adjusted operating-performance variables, there are twelve dependent variables (and thus twelve regression equations). The independent variables for the regression equations consist of

the following: the intercept, a years-independent variable, a firm-size variable, a dummy variable set equal to 1 if the contest is hostile, a dummy variable for cash tender offers, a dummy variable for contests terminated by the bidder, a dummy variable for targets whose management owns 25% or more of the stock, a dummy variable for contests that are interrupted by the 1987 stock market crash, and a dummy for contests that occurred in the second half of the time period over which the sample is collected. Also included are interaction dummies and interaction variables for the hostile contest dummy with the years-independent variable and with the firm-size variable. The key variable of interest is the dummy for hostile contests. The remaining variables are tested to ensure that any results for the hostile dummy are not due to a spurious relationship. A backward selection technique is used to remove insignificant variables.

The second type of statistical analysis is simpler in that means and medians of the dependent variables are compared to each other (pre- versus post-contest variables) across the two classifications (hostile or friendly) of the unsuccessful takeover attempts. This analysis is useful because of the ability to perform non-parametric tests on the variables. Wilcoxon tests are used to test whether or not medians equal zero. Kruskal-Wallis tests are used to compare equality of medians. Statistical comparisons of means are also performed. T-tests are used to test whether or not means equal zero; F-tests are used to test equality of means. A similar univariate analysis is performed on the changes of the five variations of the four other variables.

The final stage of the analysis is to determine whether or not there is a systematic relationship between the changes in the latter four variables and the changes in the

operating-performance variables for the firms in the sample. Cross-sectional regressions across contests are conducted. The dependent variable is change in operating performance. The independent variables are the four variables discussed above, plus those dummies that are found to be of importance from the initial analysis. In addition, interaction terms of the dummies and the other independent variables are included.

1.5 Empirical Results

After deleting those contests for which no financial data is available, the sample consists of 197 contests involving 187 different targets. Unfortunately, not all corporations have data available for all variables.

Regression results are reported in table 1-4. Only the regressions of differences (post- minus pre-event) of average industry-adjusted performance are shown; the results for pre- and post-event variables are quite similar. (Further results regarding the pre- and post-event data are reported in table 1-5.) The regression results reported omit many of the dummies initially tested. These dummies were found to consistently lack any statistical significance.

It is also found that the dummy for friendly contests terminated by bidders and the variable for number of years independent following contest are not of much significance in explaining the operating-performance results. While the dummy for friendly contests terminated by bidders at times looks promising, and while there could potentially be economic explanations as to why it is important, the regressions over the four performance variables yield estimated coefficients that are not consistent with each other. The single most important factor is whether or not the contest is hostile or friendly. None

of the other variables is consistently significant at the 10% level of significance. Since the hostile dummy is the only one consistently significant, further analysis is carried out with this variable. Table 1-5 presents the results for the performance variables when contests are classified as either friendly or hostile.

Results for the means and medians of firms' operating-performance variables for friendly and hostile takeover contests are summarized in table 1-5. The most apparent result is that the performance of targets in friendly takeover contests deteriorates significantly compared to their industries and compared to targets in hostile contests. Targets of friendly contests significantly underperform their industries before the contest and then become significantly worse after the contest. Targets of hostile contests do not perform significantly different from their industries either prior to or subsequent to the takeover contest. Although the results are not significant, it appears that targets of hostile contests slightly underperform their industries prior to the contests. After the contests they improve slightly to a point where they match their industries.

It is also interesting to observe what happens during the year of the takeover contest. Table 1-6 clearly shows that, for these operating-performance variables, hostile takeover contests do not cause the targets' performance to vary significantly from their industries. The same cannot be said for targets of friendly contests; each operating-performance variable is significantly (at a 5% level) less than the industry comparison group.

Table 1-7 presents data on how employment, pension and retirement expenses, R&D expenses, and capital expenditures change. As discussed before, each variable in

table 1-7 is presented in five ways. First, the average level of the variable in the years after the contest less the average level of the variable in the years preceding the contest is presented. The second and third variations are for the variables divided by assets or sales. The fourth and fifth variations are similar to the second and third except the ratios are measured relative to each firm's industry.

The first variable of interest in table 1-7 is the number of employees. Are jobs lost? If the corporations don't acquire or sell divisions, then it is sufficient to look at the actual change in the number of employees. However, it cannot be assumed that the companies in the sample remain of constant size (in terms of divisions or assets) during the seven-year period in question. Therefore, we must also look at number of employees per some unit of company size. Dividing number of employees by assets or by sales accomplishes this goal. Finally, it is interesting to note whether job losses (or gains) in a firm are unique to that firm or are occurring throughout the industry; here is where the industry-adjusted changes are used.

In table 1-7 it can be seen that only targets of hostile contests have significant cuts to the actual number of employees. However, both targets of friendly and hostile contests reduce employees per assets or per sales, yet the industry adjusted figures are not significantly negative. Equality of means and equality of medians across friendly and hostile contests for the variables (not industry adjusted) are tested. P-values (probabilities that the test statistics are greater than their observed values given equal means or medians) for the employees/assets means and medians are 0.6953 and 0.8975, respectively. P-values of 0.7912 and 0.4580 were found for the employees/sales means

and medians. While this evidence may be indicative of lost jobs (per unit of firm size) in both friendly and hostile contests, since both targets of hostile and friendly contests have similar losses, the evidence does not provide an explanation as to why performance of targets of friendly contests suffers while performance of targets of hostile contests remains unchanged.

The results for changes to actual pension and retirement expenses are similar to those for changes to the actual number of employees. There are reductions in pension and retirement expenses divided by assets or by sales for targets of both friendly and hostile contests, but the targets of hostile contests have significantly greater cuts than targets of friendly contests. P-values for equality of means and equality of medians (among friendly and hostile contests) for pension and retirement expenses divided by assets are 0.0090 and 0.0037, respectively; for pension and retirement expenses divided by sales, the corresponding p-values are 0.0072 and 0.0153. The larger reduction in pension and retirement expenses by targets in hostile contests may partially explain why these targets perform better than targets of friendly contests. It should be noted, though, that neither targets of friendly nor hostile contests conducts cuts to pension and retirement expenses that are significantly different than industry activity.

Research and development expenses are found next in table 1-7. Examining the results for R&D, targets of friendly contests exhibit increases while targets of hostile contests show decreases. Both results are restricted to R&D divided by sales and are only marginally significant (at a 10% level). Only for targets of hostile contests are the changes to R&D (divided by sales) significantly different from their industries.

Unfortunately, the size of the sample of firms that report R&D is relatively small (only 59 have both pre- and post-event data available). P-values comparing means and medians across friendly and hostile contests are not significant (at a 15% level) for any of the R&D variables divided by assets. Significant differences are only found for the R&D variable divided by sales. For the comparison of hostile-contest versus friendly-contest targets, P-values for non-industry-adjusted R&D divided by sales, are 0.0424 for testing equality of means, and 0.0443 for testing equality of medians. P-values for industry-adjusted R&D divided by sales, are 0.0865 for testing equality of means, and 0.0592 for testing equality of medians. So, while there is some evidence that targets of hostile contests reduce R&D more than targets of friendly contests -- which could help explain the results of tables 1-5 and 1-6 -- the level of confidence in these results is not high.

What can be said about changes in capital expenditures? Targets of both friendly and hostile contests reduce capital expenditures following the unsuccessful contests. The results are more significant for friendly contests especially when industry adjusted variables are examined. Comparing the friendly results to the hostile results to determine whether or not they are different, I find the best p-values -- for capital expenditures divided by sales (0.1308 and 0.3828 for means and medians, respectively) -- do not provide evidence of any differences. Thus, for capital expenditures, no significant differences exist to explain why performance declines for targets of friendly takeover contests but remains unchanged for targets of hostile contests.

The post- minus pre-event differences in operating-performance variables are regressed on the differences in the employee, pension and retirement expense, R&D

expense, and capital expenditure variables. A dummy denoting hostile or friendly contests is also included. Of the independent variables, only in the cases of the latter two are industry adjustments used. If the dependent variable is divided by assets, then those variables divided by assets are used for the independent variables. If sales is the denominator for the dependent variable, then it is also the denominator for the independent variables. The results of the regressions (not presented) are disappointing in that none of the independent variables (other than the hostile dummy) have any significant explanatory power. (Only one variable is an exception: difference in capital expenditures. This variable is quite significant when the dependent variable is the difference in net operating cash flow. Recall though, that net operating cash flow is defined as operating income minus capital expenditures!)

To summarize, the empirical results indicate only a few significant differences between hostile and friendly unsuccessful takeover contests. The most significant difference between friendly and hostile contests is that operating performance drops significantly for targets of friendly contests; while it rises (although not significantly) for targets of hostile contests. Compared to targets of friendly contests, targets of hostile contests tend to have significantly larger cuts to pension and retirement expenses and R&D expenses. Only the R&D cuts for hostile contests are significantly different from the industry comparison firms.

Other significant changes do occur around the takeover contests but the friendly and hostile results are not different from each other. There is evidence of employment reductions and reductions to capital expenditures. The employment reductions are not

significantly different from the reductions occurring in the matching industries. The cuts to capital expenditures are only marginally more severe than cuts in the industries.

Now that the effects of and differences between unsuccessful hostile and friendly contests are identified, I turn to the second question. Are the criticisms against hostile takeovers warranted? To answer this question I examine my evidence with evidence from other empirical studies. In the following section I conduct this analysis and attempt to interpret the results in light of the theories on corporate control.

1.6 Interpretations of Empirical Results

Many criticisms of hostile takeovers exist. Three are related to the variables of my study: hostile takeovers disrupt the operations of firms, hostile takeovers lead to the breaking of implicit contracts[7], and hostile takeovers lead to short-sighted decision making. If these criticisms are valid then the following predictions can be made about the variables of this study. Disruptions to the operations of the firm (because management is preoccupied with defending itself against takeover rather than managing the firm) cause negative shocks to operating-performance measures. Dramatic examples of breaking implicit contracts with stakeholders include employment cuts and cuts to pension and retirement funding[8]. Short-sighted decision making results in reductions to R&D and capital expenditures in an effort to boost current earnings.

Before I link my empirical results with these criticisms and predictions, it should

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[7] See Shleifer and Summers [1988] for a discussion of takeovers and the breaking of implicit contracts.

[8] Some other examples of breaking implicit contracts include wage rollbacks, changes to the workload of employees, and changes in dealings with suppliers. Unfortunately, data for these types of changes is not readily available.

be noted that there are alternative explanations (not criticisms) that coincide with the same predicted changes. Reductions to operating-performance measures may increase value if current cash flows are sacrificed to earn larger (in present value terms) future cash flows. Reductions to a firm's workforce and/or pension funding may simply be a reallocation of labour to more productive uses (within another firm or industry). Even if the labour is left unemployed, implicit contracts are not broken unless the labour was previously receiving economic rents or quasi-rents[9]. Reductions to R&D and capital expenditures may be value enhancing if these activities are negative net present value projects (as is the case if these are activities whose sole purpose is to use up the free cash flow of a firm[10]). Also note that even if these alternative explanations are completely false and the predicted behaviour is supported by the empirical evidence, the criticisms against hostile takeovers are not valid if the same behaviour is also observed in friendly takeover contests.

The change in behaviour as measured by the operating-performance variables is different for targets of hostile contests versus targets of friendly contests. As discussed previously, the latter experience declines in operating performance while targets of hostile contests maintain their industry-matching performance. Even during the year of the

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[9] Economic rents are defined as payments in excess of the opportunity costs of the resource (in this case labour). Quasi-rents are payments in excess of the short-run opportunity cost of the resource. Long-term implicit contracts with employees do not necessarily imply that they receive economic rents. The idea behind long-term implicit employment contracts is that initially employees are paid less than their marginal product but they are implicitly promised pay in the future in excess of their future marginal product. If employees are in the latter stage of their employment then they may be receiving quasi-rents. Reneging on implicit contract with employees in this latter stage may then result in a short-run cost saving for the firm.

[10] See Jensen [1986] for a discussion of the agency costs of free cash flow.

contest, there does not appear to be a disruption to targets of hostile contests. Since no changes (either positive or negative) to operating performance occur for the hostile-contest targets, no decisive verdict can be cast on the use of hostile takeovers. The criticism that hostile takeovers are disruptive to a firm's performance is not supported by this evidence. This evidence is consistent with studies of stock price reactions to unsuccessful takeovers (see Asquith [1983], Bradley, Desai and Kim [1983], and Malatesta and Thompson [1985]) that find positive cumulative abnormal returns caused by the takeover offer are eventually lost as it becomes clear that the target is to remain independent. The initial positive cumulative abnormal return can be attributed to an expectation of receiving a takeover premium. The fact that cumulative abnormal returns eventually fall back to zero indicates that the market does not perceive a long-term positive (or negative) effect from the contest.

Do the results from the employment and pension and retirement expense variables support the criticisms of hostile takeovers? The answer is no for the employment variables. Yes, jobs are lost, but the behaviour is no different for the hostile-contest targets than it is for the friendly-contest targets. Furthermore, the behaviour for both types of targets is similar to industry-wide behaviour. To criticize hostile contests on the basis of job losses, one must first argue that the occurrence of a few hostile contests causes employment cuts at all firms. Second, one must argue that these employment cuts are suboptimal. Further research is necessary to corroborate these arguments. It is not clear that hostile contests cause job losses nor is it clear that these job losses are related

to broken implicit contracts.[11]

For the pension and retirement expense variable, the answer is a qualified yes, perhaps this evidence does support one criticism of hostile takeovers. Both types of targets reduce pension and retirement expenses (per dollar of assets or sales) but hostile-contest targets have significantly larger reductions. If pension reductions can be considered evidence of breaking implicit contracts, then this criticism of hostile takeovers may be valid. I qualify this response because the hostile-contest targets do not act differently from their industries. The question arises as to whether the reductions in pension and retirement expenses are due to hostile contests or due to industry effects. If hostile takeovers tend to be concentrated in industries that have over-funded pensions, then reductions of pension and retirement expenses do not likely imply the breaking of implicit contracts and this criticism of hostile takeovers is not convincing.

Results from the investment variables provide weak evidence that can be used to criticize hostile takeover contests. This evidence comes from the R&D variable divided by sales[12]. Both industry-adjusted and unadjusted versions of this variable indicate that R&D is cut more by targets of hostile contests than by targets of friendly contests. In addition, the industry-adjusted variable indicates these cuts are more severe than industry behaviour. If these R&D cuts indicate management becomes short-sighted (sacrificing

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[11] Bhagat, Shleifer and Vishny [1990] find that for successful hostile takeovers layoffs are targeted at white-collar employees, often at the time of consolidation of headquarters. Bhide [1989, 1993] finds that only a small number of the job losses reported could actually be attributed to the takeover event. Most could be attributed to competitive forces affecting entire industries.

[12] The capital expenditure results for hostile contests are not significantly different from those for friendly contests.

the future to boost current earnings), then hostile takeover contests may warrant some of the criticism they have received. Again, it is not clear that these R&D cuts are suboptimal. Also, these results do not hold when the alternative variable, R&D divided by assets, is examined. For this latter variable, comparisons of means and medians across friendly and hostile contests do not indicate that the two types of contests are significantly different from each other. Given the limited sample of firms for which R&D data are available and the fact that other studies of successful friendly (see Healy, Palepu & Ruback [1989]) and hostile (see Bhagat, Shleifer and Vishny [1990], Bhide [1989], and Bhide [1993]) takeovers have found no significant cuts in investment, the R&D results of this study should be interpreted with caution.

1.7 Conclusions

The most significant result of this study is the decline in performance of targets of friendly takeover contests and the lack of change in performance of targets of hostile takeover contests. While there is some evidence of reductions in employees, pension and retirement expenses, R&D expenses, and capital expenditures, only for the changes to R&D expenses do hostile-contest targets have reductions that are larger than both their industry comparisons and friendly-contest targets. In addition, it is the targets of friendly contests and not the targets of hostile contests that experience large negative shocks to performance during the year of the takeover contest. The evidence for targets of hostile contests is consistent with stock price studies that find cumulative abnormal returns return to zero (indicating neither a gain nor loss from the takeover contest) after the market realizes no future contests are forthcoming.

What are the implications on social-welfare? If one is looking at just operating performance, one cannot conclude that social-welfare changes because of unsuccessful hostile contests. What about redistributions and other potential social-welfare effects? Both contests may result in the breaking of implicit contracts, but in neither type of contest is there evidence of a higher incidence of breaking implicit contracts than what is happening in the industries. From a policy viewpoint, this study does not support legislation that would deter hostile takeovers, nor does it support the encouragement of antitakeover device implementation. No evidence is found that indicates hostile takeovers result in large declines to target-firm performance or increased breaking of implicit contracts (relative to friendly contests or industries). With the possible exception of the R&D evidence (which is weak), there is no evidence from this study that strongly supports any of the criticisms against hostile takeover contests. Antitakeover devices and/or legislation restricting hostile takeovers should be advocated only if it is determined that there are other social-welfare costs that are not observed in this study.

Table 1-1: Summary of Variables

Operating Performance Variables

	Variable / end of period assets relative to industry ratio	Variable / sales relative to industry ratio
1	operating income / assets relative to industry ratio	operating income / sales relative to industry ratio
2	net operating cash flow / assets relative to industry ratio	net operating cash flow / sales relative to industry ratio

Operating income is defined as income before depreciation, interest, or taxes, and excludes gains or losses from sales of divisions or assets. Net operating cash flow is defined as operating income minus capital expenditures (capital expenditures exclude acquisitions or divestitures but rather measure new investment by the firm).

Other Variables

	Actual variable	Variable / end of period assets	Variable / sales	Variable / end of period assets relative to industry ratio	Variable / sales relative to industry ratio
1	employees	employees / assets	employees / sales	employees / assets relative to industry ratio	employees / sales relative to industry ratio
2	pension and retirement expenses	pension and retirement expenses / assets	pension and retirement expenses / sales	pension and retirement expenses / assets relative to industry ratio	pension and retirement expenses / sales relative to industry ratio
3	R&D expenses	R&D expenses / assets	R&D expenses / sales	R&D expenses / assets relative to industry ratio	R&D expenses / sales relative to industry ratio
4	capital expenditures	capital expenditures / assets	capital expenditures / sales	capital expenditures / assets relative to industry ratio	capital expenditures / sales relative to industry ratio

Table 1-2 Non-Financial Variables and Sources

Variable Name	Type of Data	Data Source
Contest Variables		
Announcement date	Day/Month/Year	1, 2
Type of contest	Friendly or hostile	1, 2, 3, 4, 5
Method of takeover	Cash offer, share swap or other	1, 2, 3, 4, 5
Reason for termination	Bidder, target, or other	1, 2, 3, 4, 5
Confounding event	1987 stock market crash	1, 2
Firm Variables		
Industry	SIC code	1, 3, 7
Ownership	Officer & director percent ownership	6
Years independent	Years independent following contest	1, 2, 3, 4, 5, 7

Sources:

1: *The Merger and Acquisition Sourcebook*
2: *Mergerstat Review*
3: *Predicasts F&S Index of Corporate Change*
4: *The Wall Street Journal Index*
5: *The Wall Street Journal*
6: *Spectrum*
7: *COMPUSTAT*

Table 1-3 Raw Financial Variables and Sources

Variable Name	Data Source	*COMPUSTAT* Data Item #
Operating Income	Income Statement	13
Assets	Balance Sheet	6
Sales (Net)	Income Statement	12
Capital Expenditures	Statement of Cash Flows	128
Pension and Retirement Expenses	Income Statement	43
Research and Development Expenses	Income Statement	46
Number of Employees	Miscellaneous	29

Table 1-4: Regressions of Differences (Post - Pre) in Average Industry-Adjusted Operating Performance on Characteristics of Takeover Contests

	Full Model[a]				Partially Reduced Model[b]				Reduced Model[c]			
Dependent Variables:	**Operating Income divided by Assets**	**Operating Income divided by Sales**	**Net Operating Cash Flow divided by Assets**	**Net Operating Cash Flow divided by Sales**	**Operating Income divided by Assets**	**Operating Income divided by Sales**	**Net Operating Cash Flow divided by Assets**	**Net Operating Cash Flow divided by Sales**	**Operating Income divided by Assets**	**Operating Income divided by Sales**	**Net Operating Cash Flow divided by Assets**	**Net Operating Cash Flow divided by Sales**
Independent Variables:												
Intercept												
Coefficient	-0.0108	-0.0365	0.0098	-0.0026	-0.0459	-0.0777	-0.0373	-0.0540	-0.0699	-0.0737	-0.0524	-0.0463
P-Value	0.7904	0.4371	0.8321	0.9586	0.0408	0.0031	0.1348	0.0481	0.0002	0.0005	0.0099	0.0354
Number of years firm remains independent (can take on values of 1, 2, or 3)												
Coefficient	-0.0145	-0.0170	-0.0192	-0.0209								
P-Value	0.3001	0.2938	0.2291	0.2294								
Dummy equal to one for hostile contests, equal to zero otherwise												
Coefficient	0.0472	0.0728	0.0456	0.0568	0.0510	0.0772	0.0512	0.0629	0.0750	0.0732	0.0663	0.0551
P-Value	0.1027	0.0306	0.1608	0.1099	0.0757	0.0208	0.1133	0.0750	0.0039	0.0131	0.0219	0.0782
Dummy equal to one for friendly contests terminated by the bidder, equal to zero otherwise												
Coefficient	-0.0658	0.0132	-0.0410	0.0245	-0.0675	0.0112	-0.0431	0.0222				
P-Value	0.0804	0.7589	0.3293	0.5929	0.0726	0.7950	0.3057	0.6284				
Number of observations	124	124	124	124	124	124	124	124	124	124	124	124
R-Squared	0.0992	0.0586	0.0652	0.0408	0.091	0.0499	0.0532	0.0285	0.0664	0.0494	0.0445	0.0265
Adjusted R-Squared	0.0766	0.0351	0.0406	0.0155	0.076	0.0342	0.0367	0.0116	0.0587	0.0416	0.0362	0.0181

Notes:

a - Firm size and insider ownership variables were also tested. These variables were not found to be significant in any of the models.

b - Years-independent variable removed from model.

c - Friendly-contest-terminated-by-bidder dummy removed from model due to its inconsistent predictions and relative lack of significance.

Table 1-5: Industry Adjusted Operating-Performance Results

		Pre-Contest	Post-Contest	Difference
Operating Income divided by Assets				
Friendly	Mean	-0.0377	-0.1023	-0.0699
Contests	P-Value	0.0162	0.0002	0.0048
	Median	-0.0076	-0.0466	-0.0211
	P-Value	0.0440	0.0001	0.0019
	N	75	73	62
Hostile	Mean	-0.0063	-0.0028	0.0051
Contests	P-Value	0.3441	0.7656	0.5683
	Median	-0.0105	-0.0036	0.0068
	P-Value	0.3284	0.6756	0.2120
	N	70	69	62
Operating Income divided by Sales				
Friendly	Mean	-0.0543	-0.1333	-0.0737
Contests	P-Value	0.0010	0.0035	0.0107
	Median	-0.0283	-0.0439	-0.0256
	P-Value	0.0045	0.0001	0.0006
	N	75	73	62
Hostile	Mean	-0.0156	-0.0135	-0.0005
Contests	P-Value	0.0492	0.1944	0.9512
	Median	-0.0117	0.0004	0.0040
	P-Value	0.0313	0.3210	0.4876
	N	70	69	62
Net Operating Cash Flow divided by Assets				
Friendly	Mean	-0.0359	-0.0839	-0.0524
Contests	P-Value	0.0483	0.0012	0.0517
	Median	-0.0193	-0.0379	-0.0192
	P-Value	0.0969	0.0002	0.0162
	N	73	72	60
Hostile	Mean	-0.0076	0.0046	0.0138
Contests	P-Value	0.2321	0.6318	0.1619
	Median	-0.0137	0.0038	0.0154
	P-Value	0.0706	0.6921	0.0510
	N	66	66	58
Net Operating Cash Flow divided by Sales				
Friendly	Mean	-0.0590	-0.1411	-0.0463
Contests	P-Value	0.0034	0.0028	0.1230
	Median	-0.0246	-0.0381	-0.0251
	P-Value	0.0206	0.0008	0.0075
	N	73	72	60
Hostile	Mean	-0.0070	0.0005	0.0088
Contests	P-Value	0.2153	0.9577	0.2511
	Median	-0.0115	-0.0002	0.0165
	P-Value	0.0612	0.8983	0.0099
	N	66	66	58

Notes to table found on next page.

Table 1-5: Notes

1. The same analysis is also conducted over subsets of the data. The data is subdivided into groups based on the number of years the company remains independent following the takeover contest (1, 2, 3 or more). The results for hostile contests are nearly identical to the above results. The results for friendly contests are similar to the above results except that the differences in pre versus post performance are larger and more significant for those companies that remain independent 3 or more years.

   The data is also subdivided into two groups based on contest dates falling in years 1980-1984 or 1985-1988. The results in the individual groups are similar to each other and to the results for the entire sample.

2. Means of differences will not necessarily be the same as difference of means. Missing data causes certain observations to be omitted from pre or post samples. Mean and median of differences is constructed from observations for which data is available in both pre and post periods.

3. The Kruskal-Wallis test (Chi-square approximation) is used for further comparisons. The medians of the differences (post - pre) of the 4 variables for friendly takeover contests are compared to the medians of the differences of the 4 variables for hostile takeover contests. The results are that the median difference for the friendly contests is significantly more negative than the median difference for the hostile contests (significant at the 1% level for each of the four variables). The difference in the medians of the pre and post variables are also compared. The results from this test are similar to (except not as significant as) the results presented for the medians of the differences -- for friendly takeovers, pre versus post operating-performance medians are different with p-values for the 4 variables of 0.046, 0.158, 0.180, 0.298 -- for hostile takeovers, none of the pre versus post operating-performance medians are significantly different; p-values for the 4 variables are 0.692, 0.416, 0.148, 0.251. P-values represent the probability that the absolute value of the test statistic is greater than its value given the null hypothesis. For means, the standard T-test is used. For medians, the sign-rank Wilcoxon test (also a T-test) is used. Two tailed tests are used in all cases.

Table 1-6: Industry-Adjusted Operating-Performance Results
for Year of Contest

		Friendly Contests	Hostile Contests	Probability that Friendly and Hostile Results are Identical
Operating Income divided by Assets				
	Mean	-0.1173	-0.0005	
	P-Value	0.014	0.9643	0.0205
	Median	-0.0233	-0.0044	
	P-Value	0.0018	0.6282	0.023
	N	77	71	
Operating Income divided by Sales				
	Mean	-0.1297	-0.0143	
	P-Value	0.0118	0.1337	0.0316
	Median	-0.0311	-0.0073	
	P-Value	0.0003	0.1963	0.012
	N	77	71	
Net Operating Cash Flow divided by Assets				
	Mean	-0.101	-0.0004	
	P-Value	0.034	0.9765	0.0516
	Median	-0.0306	-0.0063	
	P-Value	0.0396	0.844	0.1083
	N	76	67	
Net Operating Cash Flow divided by Sales				
	Mean	-0.1102	-0.0091	
	P-Value	0.0323	0.3935	0.0671
	Median	-0.0258	-0.0053	
	P-Value	0.0142	0.5466	0.0878
	N	76	67	

Table 1-7: Differences (Post-Pre) in Variables That May Affect Operating Performance

		Actual Variable	Variable divided by Assets	Variable divided by Sales	Industry-Adjusted Variable divided by Assets	Industry-Adjusted Variable divided by Sales
Employees						
Friendly	Mean	-342.2	-0.0027	-0.0014	0.0013	0.0011
Contests	P-Value	0.1980	0.0001	0.3369	0.1955	0.0639
	Median	-6.8	-0.0013	-0.0022	0.0007	0.0004
	P-Value	0.3298	0.0001	0.0001	0.1550	0.0883
	N	86	86	86	45	45
Hostile	Mean	-3355.1	-0.0024	-0.0018	0.0012	0.0009
Contests	P-Value	0.0091	0.0001	0.0001	0.1980	0.0978
	Median	-192.7	-0.0013	-0.0017	0.0002	0.0005
	P-Value	0.0142	0.0001	0.0001	0.1585	0.1085
	N	75	75	75	48	48
Pension and Retirement Expenses						
Friendly	Mean	-798723	-0.0009	-0.0009	-0.0020	-0.0009
Contests	P-Value	0.2786	0.4271	0.2476	0.3056	0.4313
	Median	0	-0.0008	-0.0003	-0.0003	0.0004
	P-Value	0.3647	0.0692	0.0730	0.8563	0.7937
	N	47	47	47	19	19
Hostile	Mean	-25352400	-0.0047	-0.0043	-0.0020	-0.0045
Contests	P-Value	0.0107	0.0001	0.0001	0.3960	0.0897
	Median	-1250000	-0.0030	-0.0021	-0.0014	-0.0011
	P-Value	0.0001	0.0001	0.0001	0.1634	0.1507
	N	65	65	65	18	18
Research and Development Expenses						
Friendly	Mean	$1,199,940	0.0091	0.0048	0.0085	0.0022
Contests	P-Value	0.3512	0.1736	0.0755	0.3146	0.4609
	Median	$0	0.0000	0.0000	-0.0030	-0.0003
	P-Value	0.1952	0.8508	0.0972	0.3171	0.8335
	N	42	42	42	32	32
Hostile	Mean	($4,210,400)	-0.0012	-0.0015	-0.0002	-0.0037
Contests	P-Value	0.0797	0.4048	0.0977	0.9027	0.0007
	Median	$0	-0.0000	-0.0000	-0.0012	-0.0023
	P-Value	0.3066	0.0959	0.0959	0.0531	0.0003
	N	34	34	34	27	27
Capital Expenditures						
Friendly	Mean	($5,199,940)	-0.0431	-0.1263	-0.0203	-0.0290
Contests	P-Value	0.2337	0.0001	0.0540	0.0655	0.0439
	Median	($133,833)	-0.0128	-0.0092	-0.0056	-0.0055
	P-Value	0.0856	0.0001	0.0001	0.1694	0.0584
	N	84	84	84	62	62
Hostile	Mean	($50,879,200)	-0.0220	-0.0153	-0.0093	-0.0102
Contests	P-Value	0.0697	0.0017	0.1661	0.1552	0.2391
	Median	($6,017,160)	-0.0152	-0.0082	-0.0041	-0.0059
	P-Value	0.0911	0.0005	0.0044	0.1803	0.0501
	N	67	67	67	59	59

Notes to table are on next page.

Table 1-7: Notes

1. The same analysis is also conducted over subsets of the data. The data is subdivided into groups based on the number of years the company remained independent following the takeover contest (1, 2, 3 or more). The results for both friendly and hostile contests are similar to the above results.

   The data is also subdivided into two groups based on contest date falling in years 1980-1984 or 1985-1988. The results in the individual groups are similar to each other and to the results for the entire sample.

2. P-values represent the probability that the absolute value of the test statistic is greater than its value given the null hypothesis. For means, the standard T-test is used. For medians, the sign-rank (Wilcoxon) test (also a T-test) is used.

Chapter 2: The Effects of Antitakeover Devices on Firm Performance

2.1 Introduction and Summary

Accompanying the 1980's takeover activity was an increase in the use of methods to protect firms from hostile takeovers. The debate is ongoing on the merits of antitakeover devices. Are they beneficial because they give management the power to negotiate for higher takeover premiums, do they give management the ability to focus on the operations of the business and allow for a longer-term view of the firm, or are they harmful because they allow management to become entrenched? I examine 900 implementations of five distinct types of antitakeover devices. Three measures of operating performance and three measures of corporate investment are inspected. Four results become evident. First, it is clear that operating performance declines significantly for firms that implement antitakeover devices. Second, the specific type of antitakeover device used is not that important to the first result. Third, the decline in performance is smaller if insider ownership is high; and fourth, when there is a significant change to long-term investment, it is a *decline* following the antitakeover device implementation. These results are consistent with studies that find negative cumulative abnormal returns around the announcement of antitakeover devices. The findings of this chapter support the reasoning that negative cumulative abnormal returns are not just a result of downward revisions in the expected takeover premium, but, instead, are partially caused by a decrease in firm performance. The evidence is consistent with a managerial entrenchment hypothesis; nothing is found to support arguments that suggest a beneficial aspect to antitakeover devices.

Chapter two continues with a description of the variables examined and a discussion

of the implications of changes in these variables. Data sources are then presented. This is followed with an explanation of the methodology used to analyze the data. Next, are the empirical results. Interpretations and conclusions close the chapter.

2.2 Variables

Three operating-performance variables are examined in this study: operating income, sales growth and employment growth. As in chapter one, the operating income variable is expressed as a ratio to firm size (measured by assets) and is then adjusted for industry effects. Growth variables are also adjusted for industry effects by taking the percentage growth in the variable for the firm and subtracting the equivalent percentage growth for the industry.

Because it is measured before interest, depreciation and tax deductions, operating income provides a means of assessing how much cash is generated from the firm's investment projects without being contaminated by financing changes. Dividing operating income by assets essentially gives a cash-flow return on assets for the firm's investment projects. Usually higher returns from assets are associated with better management of investment projects and value creation for shareholders. It should be noted though, that short-term operating income can be increased by reducing long-term investments such as R&D. If this myopic strategy reduces the total net present value of the firm's projects then it should not be considered a sign of good management. So that we will not be fooled by a myopic management strategy, I examine long-term investment measures (discussed below) in addition to the operating-performance measures.

Another aspect of operating performance is the growth of a firm. A well-managed

firm that is able to attain a competitive advantage likely captures market share and experiences increases in sales and profitability. As its sales increase it requires more employees to produce its goods and service its customers. Sometimes high sales or employment growth rates are the result of questionable management decisions (e.g., acquisition programs and/or negative NPV projects). Growth by itself does not add value for shareholders. Value is enhanced by growth only when the return on projects exceeds the opportunity cost of capital. Together, the two growth variables and the operating-income variable (a measure of profitability) give an indication of firm competitiveness and value creation.[1]

In addition to the operating-performance variables, three long-term investment variables are studied: capital expenditures, research and development expenses and cash-flow plowback. Capital expenditures and R&D are measured as ratios to the firm's assets. Corresponding industry ratios are subtracted from these investment rates. Cash-flow plowback[2] measures the amount of a firm's discretionary cash flow that is reinvested in the firm. To adjust for differences between industries, cash-flow plowback is also measured relative to industry activity.

There are two interpretations to changes in corporate investment. Increases in

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[1] The best measure of value (for shareholders) created through the management of investment projects is obviously the share price. In this study I test hypotheses on how antitakeover devices change managerial actions. To perform this analysis I cannot examine stock price reactions to announcements of antitakeover devices because the stock price reaction will be a combination of a reaction to changes in managerial behaviour and a reaction to revised expectations of receiving a takeover premium.

[2] Cash-flow plowback is defined as $1 - \frac{dividend}{discretionary\ cash\ flow}$ where discretionary cash flow equals income before extraordinary items plus depreciation plus amortization plus advertising expenses plus research and development expenses.

investment may indicate that management has taken a longer-term view of the firm instead of pursuing a myopic strategy of maximizing current earnings at the expense of the future. Alternatively, increases in investment may be harmful if the investments do not have positive net present values (see Jensen [1986] for a discussion on the wasteful use of free cash flow). It is important when analyzing changes in operating performance, particularly operating income, to also study changes in investment. As stated above, a decline in operating income need not have a negative effect on firm value if it is caused by increased investment. If the present value of expected future cash flows from the new investments is larger than the present value of cash flows lost (due to a decline in operating income) then the overall value of the firm increases.

As in chapter one, many possible explanations accompany changes in the variables studied. However, only certain specific changes to the group of variables are consistent with the alternative hypotheses on the use of antitakeover devices. The following section describes the two competing hypotheses related to antitakeover devices and defines what outcomes are consistent with each hypothesis.

2.3 Hypotheses

Two rival interpretations of the use of antitakeover devices are tested in this chapter. One is that antitakeover devices are beneficial because they allow managers to focus on the operations of the firm and manage for the long run. It is argued (see Scherer [1988], Stein [1988], and Schleifer and Vishny [1990]) that the threat of takeover may cause management to be myopic. The argument is that the market has more difficulty valuing long-term investments than management and the full value of these investments is not incorporated in

the stock price. To avoid takeover[3] by raiders who are able to recognize the full value of a firm's long-term investments, managers adopt a strategy whereby the firm produces cash flows that are more easily valued in the market. Current and near-term cash flows are easier to value than distant cash flows, so managers sacrifice long-term investments and pursue the maximization of current earnings. Adopting antitakeover devices removes the incentive for management to pursue short-term objectives. Instead, management is free to pursue valuable long-term projects that will eventually be fully valued in the market. If this "long-term horizons hypothesis" is sound, then the implications on the variables are as follows. Investment variables will show significant increases following the implementation of antitakeover devices. Operating performance may decline because of increased investment and less concern for current cash flows. (Alternatively, operating performance may increase because managers, no longer worried about a takeover, can focus on the management of the firm.)

The second interpretation of antitakeover devices is that managerial entrenchment results in reduced effort and increased waste by managers. Because managers realize they cannot be disciplined through the market for corporate control, they shirk their responsibilities and increase their consumption of perquisites. If this "managerial entrenchment hypothesis" is true then, following the implementation of antitakeover devices, operating performance of the firm should decline. This decline is not related to an increased long-term investment policy so no increases in investment should be expected, although an

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[3] Management may wish to avoid takeover because compensation may not be forthcoming to cover the costs of employment or prestige losses. Management compensation is less likely under hostile takeovers since target management is effectively bypassed as the bidder negotiates directly with shareholders.

increase in investment is not ruled out.

It is possible that, given specific changes in the variables, we will not be able to distinguish which hypothesis is best. If operating performance decreases when investment increases then neither hypothesis may be rejected. However, a decrease in operating performance combined with level or decreasing investment is only consistent with the managerial entrenchment hypothesis; these changes are inconsistent with the long-term horizons hypothesis. Alternatively, an increase in investment combined with level or increasing operating performance is consistent with the long-term horizons hypothesis but inconsistent with the managerial entrenchment hypothesis.

A third interpretation of antitakeover devices also exists. Antitakeover devices may give management enough control over voting rights so that it can negotiate for a higher takeover premium. Stulz [1988] hypothesizes that the valuation effect of increased managerial control of its firm's voting rights depends on management's initial level of control of voting rights. When a target's management controls a small proportion of the firm's voting rights, an increase in the control of voting rights by target management results in an increase in shareholder wealth. In this case, the reduced probability of a takeover succeeding is not large enough to offset the gains from larger anticipated takeover premiums. Stulz then asserts that when target management controls a large fraction of the firm's voting rights, increased management control of voting rights results in a reduction in shareholder wealth. The probability of a successful takeover is reduced substantially as target management gains a stranglehold on the voting control of the firm. Combined with no large increases to anticipated takeover premiums should a takeover occur, the overall

result is that the expected monetary gains to shareholders from takeovers is reduced and this reduction is reflected in lower share prices. Empirical evidence from the study on managerial shareholdings by Morck *et al* [1988b] is consistent with Stulz's assertions. However, Morck *et al* attribute their findings to an interaction of incentive alignment and entrenchment effects.

I do not address this third hypothesis in the rest of my study. The variables I study are not relevant to this type of argument and previous studies on stock price reactions to announcements of antitakeover devices indicate that this interpretation is not valid; stock price changes either do not change significantly or significantly decline when antitakeover devices are implemented (see DeAngelo and Rice [1983], Jarrell and Poulsen [1987 & 1988] for evidence on shareholder-approved antitakeover; see Bradley and Wakeman [1983], Dann and DeAngelo [1983 & 1988], Malatesta and Walkling [1988], and Ryngaert [1988] for evidence on non-shareholder-approved antitakeover devices). One exception is the Linn and McConnell [1983] study that finds a positive stock price reaction to shareholder-approved antitakeover devices.

2.4 Data

A sample of firms that implement antitakeover devices is gathered from *Corporate Control Alert* (poison pills implemented between 1983 and 1990), the *Wall Street Journal* (Dec. 24, 1982: first poison pill adopted), Jarrell and Poulsen [1987] (antitakeover charter amendments between 1979 and 1985), Jarrell and Poulsen [1988] (dual-class recapitalizations between 1977 and 1987), Dann and DeAngelo [1988] (corporate restructurings between 1969 and 1983), and *Corporate Takeover Defenses 1990* (published

by Investor Responsibility Research Center Inc.; includes corporate governance information on approximately 1500 of the largest U.S. firms up to mid-August, 1990). The data for operating-performance and investment variables is obtained from *COMPUSTAT*.

The types of antitakeover devices investigated include those that require shareholder approval: dual-class recapitalizations, and charter amendments (broken down into fair-price amendments and non-fair-price amendments), and those that do not require shareholder approval: poison pills, and corporate restructurings.[4] This study focuses on firms that implement any of these antitakeover devices between 1972 and 1989. Data is available for a total of 900 firms that implement one or more antitakeover devices during this time period. 515 implement poison pills, 302 adopt antitakeover charter amendments, 64 undergo dual class recapitalizations, and 26 are involved in major restructuring.

2.5 Methodology

As done in Jarrell and Poulsen [1987] I examine firms that implement some form of resistance to takeover threats (actual or perceived). I classify the firms according to the method of resistance. The issues of interest are whether pre-implementation activity and change in activity are related to the chosen antitakeover device.

The year of adoption of an antitakeover device is used as the event year of study. Pre-event and post-event versions of each activity variable (operating performance variables and investment variables) are calculated. All activity variables are adjusted for industry

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[4] Please see the appendix at the end of the thesis for a description of the various types of antitakeover devices.

effects by subtracting the equivalent industry variable[5]. For pre- and post-event variables, up to three years data[6] (if available) prior to or subsequent to the event is used. The pre- or post-event variable is calculated by taking the sum of the observed yearly variables (industry adjusted) prior to or subsequent to the event and dividing by the number of years for which the data is available.

The final variable calculated is the difference (or change) between the post-event variable and the pre-event variable. This value is simply the post-event variable minus the pre-event variable. The difference of a variable measures how the variable has changed in response to the implementation of an antitakeover device.

Two types of statistical analyses are performed on the activity variables to determine whether or not the implementation and type of antitakeover device is relevant. The first part of the analysis consists of univariate statistics calculated for each of the activity variables. This part of the analysis essentially tests the two competing hypotheses. The univariate analysis is then broken down into subsamples of firms classified by the degree of insider ownership[7] and/or the type of antitakeover device used. Individual antitakeover devices are

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5 The industry variables are calculated using all firms (except the individual firm with an event occurring) with the same 3-digit SIC code. Industry variables are also constructed eliminating all firms that had an event occurring in a particular year. The statistical results are essentially unchanged, however the sample size is reduced because some industry variables vanish. The latter results are not presented.

6 The process was repeated with 5 years data before and after the event. The results are essentially the same.

7 The degree of insider ownership is important because it is directly related to managerial entrenchment. No additional entrenchment effects from antitakeover devices would be expected if insider ownership already fully entrenches management.

analyzed to determine if and how their effects differ.[8] T-tests are used to test whether or not means equal zero; non-parametric Wilcoxon tests are used to test whether or not medians equal zero.[9] F-tests and non-parametric Kruskal-Wallis (χ^2) tests are used to compare means and medians of the activity variables across the different firm classifications.

Following the univariate tests, a series of cross-sectional (across events) regressions (OLS) are conducted. The dependent variables for the regression equations are as follows: pre-event industry adjusted activity variables, and difference in (post minus pre) industry adjusted activity variables. Since there are a total of six industry adjusted activity variables, there are twelve dependent variables (and thus twelve regression equations). The independent variables for the regression equations consist of the following: the intercept, dummies for the specific types of antitakeover devices, an ownership dummy[10] and interaction terms between the ownership dummy and the antitakeover device dummies. The regression analysis is important because it allows for joint testing of the effects of antitakeover devices and the effects of insider ownership.

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8 Previous studies have distinguished between shareholder-approved versus non-shareholder-approved antitakeover devices. It seems logical that shareholders only approve antitakeover devices when they see them to be beneficial. Non-shareholder-approved antitakeover devices would be used when shareholder approval is unlikely -- either shareholders cannot be convinced of the value of the device (this may be the case if the long-term horizons hypothesis is true) or the device's implementation is not for the benefit of shareholders (this may be the case if the managerial entrenchment hypothesis is true). Different antitakeover devices may provide different degrees of protection against takeover and thus the magnitude of changes to the variables studied may be related to the type of antitakeover device used.

9 Recall, industry-adjusted variables are examined. Zero means and medians for a variable indicate that the firm is not significantly different from its industry.

10 The ownership dummy is equal to one if the sum of corporate insider (officers or directors) ownership is greater than or equal to 25% of the firm's outstanding stock. It is expected that since a high degree of insider ownership already provides protection against takeovers, the effects of antitakeover devices are less when the ownership dummy is one. A total of 153 out of the 900 firms have insider ownership of 25% or more.

2.6 Empirical Results

The univariate statistics for all firms' activity variables are reported in table 2-1. Prior to the implementation of antitakeover devices, firms appear to perform as well as or better than their industries. In fact, both the employment growth and sales growth variables are significantly positive, indicating that firms that adopt antitakeover devices actually outperform their corresponding industries. When measuring operating income as a proportion of assets, the firms do not perform significantly better or worse than their matching industries. Significant negative changes are found for each operating-performance variable. The only change found for the investment variables that is significantly different from zero is a reduction to capital expenditures divided by assets.

It appears that the significance of changes to the activity variables is higher for firms that implement antitakeover devices and have low insider ownership. While the degrees of significance across the two insider-ownership subsamples appear to differ, comparisons of the means and medians (see table 2-4, panel 1, top) do not indicate that the subsamples are significantly different from each other. With further refinement of the comparisons, the regression analysis (presented below) shows that there are differences between low and high insider-ownership firms for some of the antitakeover subsamples.

Tables 2-2a and 2-2b present similar univariate statistics, but now the sample of firms is broken down into those that implement antitakeover devices without shareholder approval and those that adopt shareholder-approved antitakeover devices. The results for the two subsamples are much the same as the results for the entire sample. The main differences are that the negative changes to operating-performance variables are more

significant for firms implementing non-shareholder-approved antitakeover devices than for firms enacting shareholder-approved antitakeover devices. Pre-event operating performance, measured by sales growth or employment growth, is marginally better for those firms that adopt shareholder-approved antitakeover devices. In comparisons of means and medians (see table 2-4, panel 1, bottom), the two subsamples do appear to be different (at about a 10% significance level) in their pre-event sales and employment growth. Changes to the operating-performance variables are not significantly different from one subsample to the other.

Another difference between tables 2-2a and 2-2b is the capital expenditures variable. It drops significantly for firms that implement antitakeover devices without shareholder approval (and with low insider ownership) but does not change significantly for firms that adopt shareholder-approved antitakeover devices. The mean and medians across the two subsamples are different from each other at about a 10% level of significance.

In tables 2-3a through 2-3e, univariate statistics are presented for each group of firm classified by the specific type of antitakeover device adopted. Unfortunately, of the antitakeover devices implemented without shareholder approval, only a small number are defensive restructurings (table 2-3a), most are poison pills (table 2-3b). The only item of significance for defensive restructurings is the negative post-event performance as measured by operating income divided by assets. Further research with a larger sample may be warranted to determine whether sample size is the cause of the general insignificance.

The results for poison pills are similar to the general results for the full sample of firms that implement antitakeover devices. What stands out in table 2-3b is the high degree

of significance for the negative changes to operating-performance variables and capital expenditures. The pre-event operating performance is found to be either insignificantly different from zero (i.e. the firms perform about as well as their industries) or positive (the firms outperform their industries).

Of all the antitakeover devices, the results for dual-class recapitalizations are the most unique. For the subsample as a whole, none of the changes to operating-performance variables is highly significant. The most significant declines are for operating income and sales growth, but only for those firms where insiders own 25% or more of the stock. Firms with low insider ownership exhibit cash-flow plowback that is significantly positive before the recapitalizations and then drops to zero (insignificantly different from industry comparison firms). When comparing means and medians of the subsamples to each other (table 2-4), the results from dual-class recapitalizations are most different from the results for firms that adopt poison pills (see panel 4, top).

For shareholder approved antitakeover charter amendments, the results differ depending on whether they are fair-price or non-fair-price amendments. The univariate results, found in tables 2-3d and 2-3e, indicate significant negative changes to operating performance for firms that implement fair-price amendments and less significant changes to operating performance for firms that implement non-fair-price amendments. The median changes of operating income and sales growth are both significantly more negative for fair-price amendments than for non-fair-price amendments (see table 2-4, panel 6, bottom).

To simultaneously control for insider ownership and type of antitakeover device used, a series of multivariate regressions are conducted and the results are reported in table

2-5. The independent variables consist of a number of dummies. The default is the subset of firms that implement dual-class recapitalizations and have insider ownership less than 25%. The dummy variables contrast the different subsets of firms (by antitakeover device and insider ownership) against this base case. Regressions are conducted twice for each dependent variable. First a full regression (including all dummies) is performed. Then the same dummies are included in a stepwise regression using a forward selection technique. Dummies are added to the regression equation as long as they are significant at a 0.5 level. The results for the operating-performance variables are presented in panel 1 and the top of panel 2. A general result that applies to all the regressions is that there is little explanatory power. In fact, the highest R^2 obtained for the pre-event operating performance variables is 2.9% (operating income). The highest R^2 for the change in an operating performance variable is a mere 1.38% (employment growth). Only firms that implement dual-class recapitalizations (see operating income) or defensive restructurings (see each operating-performance variable) appear to underperform their industries during the pre-event period. Change in performance is negative for each operating-performance variable as measured by the intercept. None of the dummies are significantly different from zero unless the firms have high degrees of insider ownership (see amendment group for operating-income variable and poison-pill group for employment growth variable). In these two cases of high insider ownership, the negative change to performance indicated by the intercept is more than offset by the coefficients of the dummies. Three conclusions can be drawn from the regression analysis. First, it is clear that performance declines significantly for firms that implement antitakeover devices. Second, the specific type of antitakeover device used is not important

to the first result; and third, the decline in performance is smaller if insider ownership is high.

Regressions for the investment variables are presented in panel 2 (bottom) and panel 3. Nothing is significant except the regression with pre-event research and development as the dependent variable. None of the changes in these investment variables is significant and no relationships to types of antitakeover devices exist.

2.7 Interpretations of Empirical Results

The empirical results are simply not consistent with the long-term horizons hypothesis. No increase in any of the investment variables is found. What significant changes do occur for the investment variables are all in the negative direction. The investment results combined with the significant reductions to operating-performance variables[11] are consistent with the managerial entrenchment hypothesis.

Also consistent with the managerial entrenchment hypothesis are the results for the subsamples classified by the degree of insider ownership. When insiders own a small proportion of the firm's shares (i.e., they are not already entrenched) the implementation of antitakeover devices has the strong effects as discussed above. In cases where insiders are already entrenched, (arbitrarily defined as owning 25% or more of the shares) no additional entrenchment effects result from the implementation of antitakeover devices. A logical question is why do entrenched insiders implement antitakeover devices? Although I do not have evidence to support this speculation, it may be that insiders intend to liquidate or dilute

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[11] Pound [1988] provides indirect evidence that is consistent with my results. He finds negative revisions to firms' earnings forecasts if there is managerial resistance to takeovers. However, his study of 33 firms does not examine actual earnings following takeover resistance, nor does he specify the method of resistance used, nor does he control for industry effects.

some of their holdings (either by selling personal shares or issuing new shares) but do not wish to make vulnerable their entrenched positions. Further research is necessary to verify this speculation.

The one exception where performance declines more for the high-insider-ownership group is when dual-class recapitalizations are implemented. This, however, is also consistent with the managerial entrenchment hypothesis. Consider how dual-class recapitalizations work. Through various methods (see appendix) the common shares of the firm are converted into two classes. One class has superior voting rights over the other class. By design, management ends up owning the superior-voting-right shares. In order for this process to result in managerial entrenchment, managers must have owned significant blocks of shares before the process so that they can be converted into a significant amount of high-vote shares. Not much entrenchment would result if management's initial holdings were insignificant. So it is for the high-insider-ownership group that the entrenchment results are manifested.

What other differences might there be between the different types of antitakeover devices? It may be that the use of approved and non-shareholder-approved antitakeover devices depends on the circumstances of the firm prior to their implementation. One argument is that shareholder-approved devices are only used when such approval is likely. Approval is most likely when the firm is seen to be a good performer. The evidence from pre-event performance gives weak support to this argument. In general, firms outperform

their industries prior to the adoption of antitakeover devices.[12] Pre-adoption performance is higher relative to industries (significantly for sales growth and marginally for employment growth) for firms that adopt shareholder-approved devices than it is for firms that adopt antitakeover devices without shareholder approval. Once an antitakeover device is in place, changes in performance do not seem to differ between firms that receive shareholder approval and firms that do not.

Previous studies on shareholder approved antitakeover charter amendments have found different results for fair-price amendments versus non-fair-price amendments. DeAngelo and Rice [1983], who do not distinguish between the two types of amendments, find insignificant stock price reactions to their implementation. Jarrell and Poulsen [1987] do make the distinction and find significant negative share price effects of non-fair price amendments and no significant stock price effect of fair-price amendments. My results seem to run counter to the stock-price results. I find drops to operating performance for both types of amendments but fair-price amendments have significantly larger negative effects on operating income and sales growth than non-fair price amendments. The hypotheses presented above do not provide an explanation.

To summarize, there are some minor differences in how various antitakeover devices affect operating-performance and investment variables, but the general effects are quite robust. Following the implementation of antitakeover devices, investment does not increase

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[12] This result differs from the findings of Malatesta and Walkling [1988] who find poor performance (using profitability measures) relative to industries of firms prior to the implementation of poison pills. For the poison-pill firms in my study, pre-adoption operating-income divided by assets is comparable to industry performance and then drops after implementation. Their analysis of 92 firms that adopt poison pills does not examine post-implementation or change in performance.

-- if anything it drops, and operating performance exhibits significant reductions. These results are not consistent with the long-term horizons hypothesis; they are consistent with the managerial entrenchment hypothesis.

2.8 Conclusions

The evidence from this study indicates that more than just stock prices change around the implementation of antitakeover devices. The previously observed declines in stock prices around antitakeover device implementation is somewhat ambiguous because it may be caused by several factors. For example, stock prices may drop if anticipated takeover premiums and/or probabilities are reduced. Stock prices may also drop if there is an adverse effect on the firm's profitability, cash flows and/or growth. This study helps reduce the ambiguity by uncovering significant changes to three measures of operating performance. Specifically, operating income, sales growth and employment growth all decline (relative to industries) following the implementation of antitakeover devices. The evidence is consistent with a managerial entrenchment hypothesis where managers who are insulated from the market for corporate control are able to allow their firms' performance to decline. It is not clear whether managers implement antitakeover devices because they want to become inefficient or because they expect their firms to become inefficient (relative to their competitors) in spite of their best efforts. Further support for the managerial entrenchment hypothesis is found when observing already-entrenched managers implementing antitakeover devices. In this situation, antitakeover devices do not add much to entrenchment and the decline in performance is generally insignificant.

No evidence is found to support the explanation that antitakeover devices allow

management to take a more long-term-horizons view of their corporation. It may be argued that without the threat of takeover management may be unobstructed from pursuing capital investments or research and development that may not be properly valued in financial markets. These results are not observed; if anything, the opposite occurs.

Also not found in this study are strong differences in the effects of various types of antitakeover devices. While previous literature indicates different stock price effects for poison pills (stock prices drop) versus fair-price amendments (no significant effect), the changes to the operating-performance variables are not statistically different from each other. Perhaps, in addition to the similar operating-performance changes, there are differences in how the antitakeover devices affect expectations of future occurrences of takeovers. It may be these additional expectations that drive the different stock price reactions.

The story on entrenchment, incentive alignment and the disciplinary effect of the market for corporate control does not end here. In the next chapter, different ownership structures are examined to determine whether entrenchment and incentive-alignment effects are manifested in the performance of corporations.

Table 2-1
Univariate Statistics for Firms that Implement Antitakeover Devices

	Operating Income Divided by Assets			Sales Growth			Employment Growth		
All firms in sample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.002930	-0.014060	-0.013450	0.099977	-0.008850	-0.126370	0.065479	-0.012200	-0.088740
P-Value	0.3937	0.0002	0.0002	0.0109	0.3777	0.0107	0.0034	0.1662	0.0019
Median	-0.000520	-0.012340	-0.011370	0.013897	-0.020230	-0.055890	0.018573	-0.014400	-0.050390
P-Value	0.7216	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0017	0.0001
N	828	680	668	855	705	592	817	681	556
	Capital Expenditures Divided by Assets			Research and Development Divided by Assets			Cash-Flow Plowback		
All firms in sample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.003917	-0.003930	-0.007110	0.000729	0.000552	0.001042	0.032395	0.028774	-0.007760
P-Value	0.0404	0.0588	0.0014	0.6988	0.8333	0.5259	0.0858	0.0040	0.4659
Median	-0.003450	-0.010890	-0.001890	-0.002150	-0.001650	0.000180	0.035170	0.038624	-0.004350
P-Value	0.6561	0.0001	0.0020	0.0118	0.0217	0.6592	0.0001	0.0001	0.1361
N	813	664	650	469	368	354	269	187	173
	Operating Income Divided by Assets			Sales Growth			Employment Growth		
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.000140	-0.011960	-0.015960	0.096670	-0.013040	-0.130310	0.039627	-0.017480	-0.063250
P-Value	0.9686	0.0019	0.0001	0.0391	0.2534	0.0303	0.0001	0.0704	0.0001
Median	-0.000100	-0.011910	-0.011320	0.010373	-0.023660	-0.057340	0.018287	-0.018510	-0.051830
P-Value	0.8938	0.0006	0.0001	0.0002	0.0001	0.0001	0.0001	0.0004	0.0001
N	680	549	537	707	573	561	675	552	531
	Capital Expenditures Divided by Assets			Research and Development Divided by Assets			Cash-Flow Plowback		
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.003987	-0.002650	-0.006530	-0.000780	-0.002530	0.000785	0.025770	0.013203	-0.010200
P-Value	0.0553	0.2687	0.0086	0.6829	0.3070	0.5754	0.2635	0.2288	0.4423
Median	-0.003860	-0.009930	-0.001970	-0.002170	-0.001670	0.000325	0.028787	0.030011	-0.004630
P-Value	0.5126	0.0001	0.0051	0.0098	0.0074	0.6056	0.0024	0.0007	0.2723
N	665	535	521	389	297	287	214	138	132
	Operating Income Divided by Assets			Sales Growth			Employment Growth		
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.015770	-0.022830	-0.003160	0.115774	0.009333	-0.109500	0.188365	0.010394	-0.197010
P-Value	0.1214	0.0464	0.7702	0.0023	0.6490	0.0162	0.1305	0.6272	0.1623
Median	-0.004690	-0.020480	-0.012470	0.042820	-0.000350	-0.048010	0.022133	0.000331	-0.043090
P-Value	0.5547	0.0152	0.2274	0.0002	0.8140	0.0018	0.0097	0.9376	0.0084
N	148	131	131	148	132	131	142	129	125
	Capital Expenditures Divided by Assets			Research and Development Divided by Assets			Cash-Flow Plowback		
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.003601	-0.009240	-0.009470	0.008050	0.013436	0.002139	0.058174	0.072626	0.000092
P-Value	0.4538	0.0202	0.0572	0.1831	0.1276	0.7352	0.0079	0.0010	0.9948
Median	0.000441	-0.012780	-0.001570	-0.000340	0.000000	0.000000	0.065305	0.059484	-0.002220
P-Value	0.7346	0.0111	0.1802	0.7092	0.8066	0.9632	0.0001	0.0001	0.3026
N	148	129	129	80	71	67	55	49	41

Table 2-2a

Univariate Statistics for Firms that Implement Antitakeover Devices Without Shareholder Approval

	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.000717	-0.013630	-0.016260	0.039499	-0.011880	-0.056220	0.034858	-0.021030	-0.060530
P-Value	0.8404	0.0076	0.0003	0.0014	0.4788	0.0121	0.0001	0.1408	0.0011
Median	-0.002900	-0.012550	-0.012190	-0.000170	-0.027210	-0.052130	0.013941	-0.026160	-0.063470
P-Value	0.5284	0.0008	0.0001	0.2215	0.0001	0.0001	0.0002	0.0002	0.0001
N	490	363	359	504	379	372	478	362	348
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.004908	-0.005900	-0.010430	-0.001810	-0.001100	0.002628	0.021067	0.020902	-0.000280
P-Value	0.0447	0.0226	0.0003	0.3626	0.7509	0.1228	0.4950	0.1204	0.9869
Median	-0.002880	-0.009690	-0.004400	-0.002400	-0.001660	0.000728	0.026816	0.035688	0.000320
P-Value	0.9921	0.0001	0.0005	0.0114	0.0929	0.0280	0.0126	0.0006	0.9577
N	487	361	355	287	202	193	155	88	84
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.002456	-0.012580	-0.017710	0.037613	-0.014230	-0.058020	0.036991	-0.026050	-0.070570
P-Value	0.4861	0.0136	0.0001	0.0045	0.4257	0.0141	0.0001	0.0688	0.0001
Median	-0.001350	-0.012500	-0.012290	-0.000850	-0.028800	-0.056170	0.015036	-0.027970	-0.066790
P-Value	0.7549	0.0016	0.0001	0.3349	0.0001	0.0001	0.0001	0.0001	0.0001
N	444	328	324	456	342	335	433	327	314
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.005480	-0.004840	-0.010280	-0.002270	-0.003260	0.001989	0.023579	0.019538	-0.000540
P-Value	0.0286	0.0731	0.0006	0.2340	0.3360	0.2429	0.4902	0.1764	0.9775
Median	-0.003200	-0.007210	-0.004380	-0.002400	-0.002480	0.000776	0.026724	0.035688	-0.000920
P-Value	0.9639	0.0006	0.0009	0.0175	0.0506	0.0289	0.0172	0.0014	0.9918
N	441	326	320	263	187	178	139	80	76
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.016060	-0.023500	-0.002760	0.057421	0.009779	-0.039950	0.014332	0.025939	0.032201
P-Value	0.3430	0.3155	0.9049	0.0879	0.8408	0.5785	0.6811	0.6833	0.7174
Median	-0.013310	-0.021050	-0.004890	0.008654	0.000092	0.000000	0.005704	0.002471	0.020599
P-Value	0.3070	0.2861	0.8853	0.3356	0.9143	0.6776	0.7942	0.7122	0.7955
N	46	35	35	48	37	37	45	35	34
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.000580	-0.015750	-0.011800	0.003249	0.025821	0.010209	-0.000750	0.034541	0.002101
P-Value	0.9526	0.0799	0.2281	0.7799	0.2063	0.2441	0.9846	0.3320	0.9204
Median	0.003764	-0.019190	-0.006300	-0.002060	0.000000	0.000000	0.030714	0.041431	0.003498
P-Value	0.8592	0.0562	0.3580	0.4584	0.6221	0.5417	0.4332	0.3125	0.8437
N	46	35	35	24	15	15	16	8	8

Table 2-2b

Univariate Statistics for Firms that Implement Shareholder-Approved Antitakeover Devices

	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.008390	-0.016030	-0.011610	0.189174	-0.006690	-0.212250	0.109451	-0.003090	-0.122660
P-Value	0.2164	0.0055	0.0461	0.0487	0.4918	0.0457	0.0409	0.7517	0.0359
Median	0.001613	-0.011730	-0.009570	0.028616	-0.012990	-0.063800	0.023938	-0.002560	-0.043400
P-Value	0.9020	0.0063	0.0099	0.0001	0.0890	0.0001	0.0001	0.5742	0.0001
N	331	310	302	344	319	313	332	312	301
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.002327	-0.001720	-0.003120	0.004884	0.002697	-0.000910	0.050279	0.036421	-0.015480
P-Value	0.4573	0.6160	0.3813	0.1966	0.5136	0.7647	0.0012	0.0162	0.2438
Median	-0.005710	-0.012790	0.000232	-0.000450	-0.000220	-0.000440	0.058966	0.053534	-0.012260
P-Value	0.4323	0.0023	0.3874	0.3898	0.1406	0.1102	0.0001	0.0004	0.0290
N	319	296	288	178	161	157	110	96	86
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.005240	-0.012600	-0.014850	0.206611	-0.012650	-0.242420	0.043179	-0.005790	-0.052250
P-Value	0.5123	0.0334	0.0197	0.1205	0.2256	0.1045	0.0001	0.6198	0.0005
Median	0.000481	-0.010100	-0.005930	0.022473	-0.013290	-0.066920	0.019249	-0.002020	-0.033690
P-Value	0.8804	0.0824	0.0431	0.0001	0.0613	0.0001	0.0001	0.4207	0.0001
N	230	215	207	245	225	220	236	219	211
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.000795	0.000728	-0.000330	0.002236	-0.001310	-0.001050	0.031853	0.003640	-0.024120
P-Value	0.8352	0.8739	0.9406	0.6136	0.7110	0.6734	0.0917	0.8366	0.1936
Median	-0.007340	-0.014420	0.001508	-0.000860	-0.001030	-0.001390	0.038942	0.028675	-0.012260
P-Value	0.2492	0.0134	0.7379	0.2261	0.0748	0.0841	0.0558	0.1625	0.1033
N	218	203	195	123	106	106	72	56	54
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.015560	-0.023800	-0.004550	0.146020	0.007571	-0.140880	0.272369	0.003255	-0.287730
P-Value	0.2258	0.0739	0.7113	0.0073	0.7274	0.0143	0.1382	0.8568	0.1360
Median	0.008420	-0.020480	-0.017800	0.056051	-0.008720	-0.059890	0.033931	-0.004950	-0.066040
P-Value	0.9906	0.0206	0.1259	0.0001	0.7891	0.0005	0.0026	0.8240	0.0021
N	101	95	95	99	94	93	96	93	90
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.005634	-0.007070	-0.008970	0.010808	0.010413	-0.000630	0.085192	0.082314	-0.000890
P-Value	0.3048	0.1073	0.1272	0.1366	0.3004	0.9368	0.0016	0.0016	0.9594
Median	0.000630	-0.010330	-0.000650	-0.000170	-0.000060	0.000000	0.068556	0.064124	-0.014360
P-Value	0.7152	0.0816	0.2763	0.8158	0.9597	0.6315	0.0001	0.0001	0.1642
N	101	93	93	55	55	51	38	40	32

Table 2-3a
Univariate Statistics for Firms that Implement Defensive Restructurings

	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.007830	-0.038320	-0.021360	-0.018250	-0.014800	0.011308	-0.013260	0.008675	0.030663
P-Value	0.5315	0.0341	0.2351	0.2858	0.6452	0.7920	0.5157	0.8466	0.5615
Median	-0.012610	-0.029930	-0.024410	-0.030280	-0.021430	-0.009510	-0.004260	-0.012640	-0.007730
P-Value	0.4190	0.0443	0.1167	0.1978	0.5966	1.0000	0.6775	0.8999	0.9780
N	24	16	16	25	16	15	24	16	15
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.013190	-0.005610	-0.013700	-0.001590	0.001918	0.003293	-0.004840	0.039870	0.019693
P-Value	0.2195	0.6361	0.3327	0.7282	0.8261	0.2113	0.8095	0.6043	0.8484
Median	-0.003270	0.002087	-0.021080	-0.003880	-0.005370	0.001283	-0.001490	-0.001870	0.033368
P-Value	0.7187	0.8603	0.3484	0.2114	0.1953	0.2500	0.8311	1.0000	0.7500
N	24	16	16	17	8	8	11	3	3

Note: Insider ownership is less than 25% for all firms adopting defensive restructurings

Table 2-3b
Univariate Statistics for Firms that Implement Poison Pills

	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.001158	-0.012490	-0.016020	0.042513	-0.011750	-0.059060	0.037401	-0.022400	-0.064630
P-Value	0.7539	0.0180	0.0005	0.0011	0.5010	0.0112	0.0001	0.1303	0.0008
Median	-0.002430	-0.012040	-0.011480	0.003412	-0.028470	-0.055280	0.016039	-0.027230	-0.065480
P-Value	0.6375	0.0027	0.0001	0.1373	0.0001	0.0001	0.0001	0.0001	0.0001
N	466	347	343	479	363	357	454	346	333
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.004478	-0.005910	-0.010270	-0.001830	-0.001230	0.002599	0.023046	0.020233	-0.001020
P-Value	0.0748	0.0260	0.0004	0.3840	0.7333	0.1429	0.4877	0.1424	0.9539
Median	-0.002880	-0.009690	-0.004360	-0.002290	-0.001650	0.000728	0.028505	0.038576	-0.000670
P-Value	0.9321	0.0001	0.0008	0.0185	0.1227	0.0425	0.0128	0.0008	0.9424
N	463	345	339	270	194	185	144	85	81
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.003044	-0.011250	-0.017530	0.040853	-0.014200	-0.061270	0.039939	-0.027840	-0.075650
P-Value	0.4059	0.0329	0.0001	0.0035	0.4472	0.0130	0.0001	0.0615	0.0001
Median	0.000650	-0.011980	-0.011990	0.002081	-0.030160	-0.057390	0.019006	-0.028450	-0.075740
P-Value	0.8928	0.0056	0.0001	0.2144	0.0001	0.0001	0.0001	0.0001	0.0001
N	420	312	308	431	326	320	409	311	299
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.005037	-0.004800	-0.010100	-0.002320	-0.003500	0.001928	0.026021	0.018746	-0.001370
P-Value	0.0508	0.0842	0.0010	0.2507	0.3216	0.2788	0.4829	0.2070	0.9443
Median	-0.003200	-0.007210	-0.004340	-0.002290	-0.001670	0.000776	0.027914	0.038576	-0.001160
P-Value	0.8809	0.0004	0.0013	0.0284	0.0702	0.0451	0.0179	0.0017	0.8983
N	417	310	304	246	179	170	128	77	73
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.016060	-0.023500	-0.002760	0.057421	0.009779	-0.039950	0.014332	0.025939	0.032201
P-Value	0.3430	0.3155	0.9049	0.0879	0.8408	0.5785	0.6811	0.6833	0.7174
Median	-0.013310	-0.021050	-0.004890	0.008654	0.000092	0.000000	0.005704	0.002471	0.020599
P-Value	0.3070	0.2861	0.8853	0.3356	0.9143	0.6776	0.7942	0.7122	0.7955
N	46	35	35	48	37	37	45	35	34
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.000580	-0.015750	-0.011800	0.003249	0.025821	0.010209	-0.000750	0.034541	0.002101
P-Value	0.9526	0.0799	0.2281	0.7799	0.2063	0.2441	0.9846	0.3320	0.9204
Median	0.003764	-0.019190	-0.006300	-0.002060	0.000000	0.000000	0.030714	0.041431	0.003498
P-Value	0.8592	0.0562	0.3580	0.4584	0.6221	0.5417	0.4332	0.3125	0.8437
N	46	35	35	24	15	15	16	8	8

Table 2-3c
Univariate Statistics for Firms that Implement Dual Class Restructurings

	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.023450	-0.012430	-0.016800	0.713531	0.040515	-0.792590	0.427189	0.057855	-0.441250
P-Value	0.4069	0.2383	0.1719	0.2273	0.1319	0.2458	0.2251	0.0293	0.2537
Median	0.008420	-0.012690	-0.012470	0.055192	0.016175	-0.057740	0.056670	0.027663	-0.043400
P-Value	0.8170	0.1774	0.1526	0.0004	0.4256	0.0122	0.0042	0.0419	0.1522
N	55	54	49	55	51	48	50	50	45
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.012360	-0.001990	0.003318	0.012317	-0.004640	-0.000940	0.049982	0.040440	-0.043990
P-Value	0.0471	0.8800	0.6612	0.4921	0.4791	0.8792	0.0658	0.2032	0.1814
Median	-0.015650	-0.015470	0.007403	-0.001440	-0.000100	-0.000920	0.058835	0.051898	-0.029380
P-Value	0.0293	0.1149	0.4849	0.5046	0.4477	0.4980	0.0785	0.4631	0.1055
N	55	53	48	26	24	22	14	15	10
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.069220	-0.017430	-0.006550	1.316872	0.065808	-1.578230	0.086604	0.096176	-0.034040
P-Value	0.2326	0.1944	0.7553	0.2779	0.1611	0.2950	0.0862	0.0469	0.6554
Median	-0.016400	-0.020250	-0.010110	0.064787	0.028003	-0.037690	0.064235	0.037128	-0.032190
P-Value	0.2451	0.2088	0.7181	0.0062	0.2742	0.1528	0.0117	0.0188	0.4684
N	26	27	22	27	24	22	24	23	21
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.010360	0.004929	-0.003070	0.029869	-0.001350	-0.006500	0.063714	0.012883	-0.082760
P-Value	0.3384	0.8415	0.7697	0.2963	0.9005	0.5026	0.0044	0.6509	0.0900
Median	-0.024400	-0.020620	0.004628	-0.001440	0.002690	-0.005940	0.059022	0.051898	-0.039570
P-Value	0.2777	0.2991	0.9625	0.8603	0.8926	0.1099	0.0117	0.9375	0.0625
N	26	27	22	16	13	13	9	7	5
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.017596	-0.007430	-0.025160	0.131738	0.018033	-0.127820	0.741576	0.025211	-0.797570
P-Value	0.2086	0.6548	0.0892	0.0670	0.5478	0.0885	0.2771	0.3572	0.2737
Median	0.015732	-0.010530	-0.012470	0.031070	-0.011670	-0.060030	0.045978	-0.004950	-0.053510
P-Value	0.1413	0.5423	0.1143	0.0243	0.9814	0.0467	0.1550	0.4107	0.1753
N	29	27	27	28	27	26	26	27	24
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.014150	-0.009170	0.008727	-0.015770	-0.008530	0.007079	0.025264	0.064553	0.014152
P-Value	0.0438	0.3121	0.4282	0.1127	0.2438	0.2700	0.7240	0.2553	0.7044
Median	-0.009500	-0.008580	0.008926	-0.002060	-0.000210	0.001428	-0.026700	0.044986	-0.011750
P-Value	0.0775	0.2777	0.4345	0.1484	0.3125	0.1562	1.0000	0.3750	1.0000
N	29	26	26	10	11	9	5	8	4

Table 2-3d
Univariate Statistics for Firms that Implement Fair-Price Charter Amendments

	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.005470	-0.019420	-0.014070	0.075029	-0.022960	-0.101790	0.056090	-0.015160	-0.070280
P-Value	0.4573	0.0101	0.0622	0.0014	0.0439	0.0001	0.0001	0.2344	0.0001
Median	-0.000100	-0.012710	-0.014870	0.033216	-0.019430	-0.072400	0.019436	-0.008810	-0.047040
P-Value	0.7108	0.0295	0.0042	0.0001	0.0071	0.0001	0.0001	0.1628	0.0001
N	190	176	173	204	187	185	199	183	179
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.005559	0.002327	-0.000570	0.002412	0.004358	0.000207	0.048233	0.034750	-0.020710
P-Value	0.2052	0.5586	0.9103	0.5805	0.4961	0.9646	0.0246	0.1055	0.2377
Median	-0.004720	-0.010750	-0.000770	-0.001780	-0.002280	0.000000	0.059442	0.063245	-0.011290
P-Value	0.9810	0.2632	0.4866	0.1126	0.1709	0.6897	0.0063	0.0018	0.1149
N	178	163	160	103	91	91	64	57	54
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.005906	-0.008350	-0.016540	0.050053	-0.031620	-0.082630	0.040246	-0.014580	-0.050390
P-Value	0.2902	0.2216	0.0202	0.0001	0.0034	0.0001	0.0004	0.3001	0.0022
Median	0.001704	-0.007950	-0.013800	0.024674	-0.016590	-0.073200	0.015173	-0.005710	-0.038140
P-Value	0.2744	0.3174	0.0122	0.0001	0.0096	0.0001	0.0013	0.2460	0.0005
N	147	136	133	162	148	146	158	145	141
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.004606	0.005149	0.002651	-0.003990	-0.002740	0.000057	0.019286	0.003077	-0.020600
P-Value	0.3703	0.2729	0.6753	0.2455	0.4208	0.9820	0.3936	0.9056	0.4310
Median	-0.005710	-0.010430	0.001508	-0.002370	-0.002430	0.000000	0.042945	0.033893	-0.012140
P-Value	0.5909	0.4627	0.8805	0.0349	0.0709	0.6999	0.3625	0.2134	0.3753
N	135	124	121	75	64	64	44	36	35
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.044380	-0.057040	-0.005860	0.171363	0.009925	-0.173520	0.117146	-0.017340	-0.144080
P-Value	0.0914	0.0157	0.7973	0.1039	0.7859	0.1116	0.0215	0.5673	0.0026
Median	-0.013250	-0.040920	-0.025010	0.061398	-0.022610	-0.069380	0.033936	-0.018270	-0.098980
P-Value	0.2363	0.0067	0.1960	0.0056	0.4838	0.0033	0.0174	0.4538	0.0020
N	43	40	40	42	39	39	41	38	38
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.008552	-0.006650	-0.010580	0.019563	0.021173	0.000563	0.111916	0.089048	-0.020910
P-Value	0.3133	0.3668	0.1498	0.1369	0.2956	0.9697	0.0174	0.0168	0.1479
Median	0.016109	-0.010750	-0.008380	-0.000330	-0.000920	0.000000	0.066846	0.071707	-0.010440
P-Value	0.4390	0.3493	0.2461	0.7792	0.9272	0.7766	0.0001	0.0001	0.1819
N	43	39	39	28	27	27	20	21	19

Table 2-3e
Univariate Statistics for Firms that Implement Non-Fair-Price Amendments

	Operating Income Divided by Assets			Sales Growth			Employment Growth		
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.005220	-0.011030	-0.003120	0.123831	0.001132	-0.119490	0.045980	-0.013730	-0.058250
P-Value	0.6021	0.4094	0.8076	0.0372	0.9594	0.0642	0.0386	0.4525	0.0337
Median	0.003784	-0.008830	0.007316	0.014976	-0.014700	-0.011470	0.015795	-0.000690	-0.033360
P-Value	0.6309	0.2623	0.8754	0.1563	0.9312	0.1514	0.2206	0.5675	0.0692
N	86	80	80	85	81	80	83	79	77
	Capital Expenditures Divided by Assets			Research and Development Divided by Assets			Cash-Flow Plowback		
All firms in subsample	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.005030	-0.009800	-0.012070	0.006137	0.003240	-0.003220	0.054502	0.037875	0.010318
P-Value	0.4066	0.0348	0.0580	0.1597	0.6041	0.4440	0.0713	0.1728	0.6913
Median	-0.002350	-0.015110	-0.001240	0.000000	-0.000030	-0.001970	0.052292	0.026955	-0.004120
P-Value	0.9677	0.0021	0.2482	0.2580	0.8274	0.0695	0.0211	0.1083	0.5604
N	86	80	80	49	46	44	32	24	22
	Operating Income Divided by Assets			Sales Growth			Employment Growth		
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.004810	-0.021230	-0.014040	0.124208	0.004791	-0.125920	0.032460	-0.026780	-0.065430
P-Value	0.6998	0.1707	0.3680	0.1175	0.8460	0.1391	0.2181	0.1932	0.0299
Median	0.001613	-0.007640	0.007316	-0.016970	-0.026430	-0.003530	0.018481	-0.015250	-0.033690
P-Value	0.6632	0.3124	0.9356	0.7111	0.6976	0.3256	0.5375	0.2158	0.0705
N	57	52	52	56	53	52	54	51	49
	Capital Expenditures Divided by Assets			Research and Development Divided by Assets			Cash-Flow Plowback		
Insiders own less than 25%	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.003140	-0.011990	-0.006110	0.003011	0.001866	-0.001060	0.045863	0.000222	-0.006540
P-Value	0.6313	0.0550	0.3685	0.5891	0.8463	0.8608	0.3520	0.9924	0.7938
Median	-0.006330	-0.019040	-0.000460	-0.000180	-0.000590	-0.002220	0.020008	0.020390	0.004875
P-Value	0.4819	0.0019	0.6993	0.6877	0.5613	0.2729	0.4653	0.4973	0.8394
N	57	52	52	32	29	29	19	13	13
	Operating Income Divided by Assets			Sales Growth			Employment Growth		
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	-0.006000	0.007901	0.017177	0.123104	-0.005800	-0.107540	0.071155	0.010030	-0.045690
P-Value	0.7260	0.7572	0.4486	0.1509	0.8983	0.2727	0.0846	0.7807	0.4072
Median	0.016443	-0.011210	0.000757	0.038806	0.019101	-0.031550	0.013401	0.017913	-0.020420
P-Value	0.9580	0.5634	0.7732	0.0511	0.7902	0.3033	0.2196	0.5045	0.4903
N	29	28	28	29	28	28	29	28	28
	Capital Expenditures Divided by Assets			Research and Development Divided by Assets			Cash-Flow Plowback		
Insiders own 25% or more	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Mean	0.021089	-0.005720	-0.023140	0.012022	0.005584	-0.007400	0.067127	0.082375	0.034675
P-Value	0.0931	0.3861	0.0811	0.0931	0.2382	0.0938	0.0035	0.1323	0.5300
Median	0.000854	-0.006470	-0.009270	0.000000	0.000000	-0.001430	0.071367	0.063059	-0.021460
P-Value	0.3232	0.3719	0.1354	0.2078	0.5995	0.1531	0.0081	0.0840	0.5703
N	29	28	28	17	17	15	13	11	9

Table 2-4
Pairwise Comparisons for Groups of Firms Classified by Ownership or Type of Antitakeover Device
Panel 1

Insiders own less than 25% vs. Insiders own 25% or more									
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.0815	0.2579	0.1531	0.8538	0.3846	0.8690	0.0113	0.2150	0.0649
Prob>Chisq	0.6056	0.3360	0.7861	0.0351	0.1365	0.9975	0.6300	0.1250	0.6761
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.9378	0.2100	0.5971	0.0777	0.0161	0.7471	0.4877	0.0078	0.6815
Prob>Chisq	0.6606	0.6525	0.8560	0.5946	0.1945	0.8139	0.0101	0.0448	0.6632
Shareholder Approved vs. Not Shareholder Approved Antitakeover Device									
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.1970	0.7528	0.5179	0.0629	0.7986	0.1193	0.1025	0.3148	0.2815
Prob>Chisq	0.6080	0.7723	0.7256	0.0001	0.0856	0.1866	0.1698	0.0225	0.2820
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.5122	0.3216	0.1036	0.0862	0.4781	0.2882	0.4512	0.4411	0.4836
Prob>Chisq	0.2400	0.7343	0.0935	0.3159	0.6979	0.0102	0.0189	0.3072	0.1041

Prob > F represents P-value for testing equality of means.

Prob > Chisq represents P-value for testing equality of medians (Kruskal-Wallis Test)

Table 2-4
Pairwise Comparisons for Groups of Firms Classified by Ownership or Type of Antitakeover Device
Panel 2

Defensive Restructurings vs. Poison Pills									
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.5863	0.2971	0.8037	0.2851	0.9709	0.5353	0.2014	0.6545	0.2945
Prob>Chisq	0.5308	0.1965	0.2995	0.2149	0.6376	0.2302	0.1851	0.4969	0.1098
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.4399	0.9804	0.8014	0.9775	0.8602	0.9352	0.8170	0.7909	0.8251
Prob>Chisq	0.6781	0.5697	0.7346	0.9844	0.7954	0.7810	0.2445	0.7738	0.5230
Defensive Restructurings vs. Dual Class Restructurings									
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.7198	0.2251	0.8463	0.4027	0.2778	0.5102	0.3849	0.3472	0.4809
Prob>Chisq	0.5087	0.2878	0.5424	0.0020	0.3856	0.1293	0.0122	0.2432	0.3701
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.0293	0.8842	0.2681	0.5352	0.5958	0.6859	0.1107	0.9939	0.3969
Prob>Chisq	0.0700	0.4949	0.2387	0.9999	0.6014	0.2227	0.1005	0.8590	0.3105

Prob > F represents P-value for testing equality of means.

Prob > Chisq represents P-value for testing equality of medians (Kruskal-Wallis Test)

Table 2-4
Pairwise Comparisons for Groups of Firms Classified by Ownership or Type of Antitakeover Device
Panel 3

Defensive Restructurings vs. Fair-Price Charter Amendments									
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.9114	0.4557	0.7728	0.1616	0.8378	0.2136	0.0799	0.5961	0.0808
Prob>Chisq	0.4498	0.2045	0.5504	0.0037	0.7800	0.0666	0.0748	0.8386	0.1629
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.5427	0.5482	0.4328	0.7142	0.9109	0.8453	0.3052	0.9566	0.5986
Prob>Chisq	0.5151	0.9355	0.4905	0.9910	0.8573	0.3620	0.0677	0.8255	0.4748
Defensive Restructurings vs. Non-Fair-Price Charter Amendments									
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.8961	0.3767	0.5396	0.1935	0.7598	0.3814	0.1632	0.6196	0.1760
Prob>Chisq	0.7722	0.1377	0.1687	0.0916	0.7558	0.5815	0.4113	0.9129	0.3832
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.5215	0.7147	0.9155	0.3245	0.9318	0.5136	0.2550	0.9803	0.9032
Prob>Chisq	0.5529	0.3870	0.7014	0.1726	0.4359	0.0942	0.1191	0.8774	0.5583

Prob > F represents P-value for testing equality of means.

Prob > Chisq represents P-value for testing equality of medians (Kruskal-Wallis Test)

Table 2-4
Pairwise Comparisons for Groups of Firms Classified by Ownership or Type of Antitakeover Device
Panel 4

Poison Pills vs. Dual Class Restructurings									
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.0879	0.9964	0.9516	0.0009	0.2731	0.0040	0.0010	0.0460	0.0116
Prob>Chisq	0.6412	0.8936	0.9168	0.0021	0.0252	0.3810	0.0470	0.0016	0.5229
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.0267	0.6427	0.0976	0.1029	0.7454	0.5231	0.8012	0.5644	0.4067
Prob>Chisq	0.0192	0.8000	0.0479	0.9962	0.9863	0.1370	0.1783	0.7981	0.0777
Poison Pills vs. Fair-Price Charter Amendments									
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.3733	0.4468	0.8154	0.1921	0.6624	0.2493	0.2519	0.7456	0.8437
Prob>Chisq	0.5619	0.9341	0.5092	0.0005	0.5705	0.0643	0.3596	0.1922	0.3566
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.8244	0.0813	0.0769	0.3277	0.4143	0.5617	0.6264	0.5466	0.4480
Prob>Chisq	0.7827	0.2393	0.2304	0.8652	0.9803	0.1609	0.0578	0.1755	0.1808

Prob > F represents P-value for testing equality of means.

Prob > Chisq represents P-value for testing equality of medians (Kruskal-Wallis Test)

Table 2-4
Pairwise Comparisons for Groups of Firms Classified by Ownership or Type of Antitakeover Device
Panel 5

Poison Pills vs. Non-Fair-Price Charter Amendments									
	Operating Income Divided by Assets			Sales Growth			Employment Growth		
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.5069	0.9084	0.2535	0.0391	0.7375	0.2932	0.7106	0.7874	0.8787
Prob>Chisq	0.7812	0.6356	0.0868	0.4103	0.0953	0.3266	0.7951	0.2384	0.2500
	Capital Expenditures Divided by Assets			Research and Development Divided by Assets			Cash-Flow Plowback		
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.9310	0.5121	0.7876	0.1300	0.5766	0.1625	0.6615	0.5499	0.7565
Prob>Chisq	0.8044	0.5137	0.6504	0.0498	0.4690	0.0124	0.3271	0.9621	0.6786
Dual-Class Restructurings vs. Fair-Price Charter Amendments									
	Operating Income Divided by Assets			Sales Growth			Employment Growth		
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.3771	0.6343	0.8601	0.0373	0.0141	0.0465	0.0353	0.0092	0.0555
Prob>Chisq	0.9380	0.9236	0.8808	0.2213	0.0588	0.9789	0.1050	0.0133	0.8299
	Capital Expenditures Divided by Assets			Research and Development Divided by Assets			Cash-Flow Plowback		
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.0375	0.6725	0.7026	0.4239	0.4861	0.9082	0.9700	0.8977	0.5855
Prob>Chisq	0.0688	0.2966	0.3982	0.9579	0.8851	0.5472	0.9481	0.4881	0.1831

Prob > F represents P-value for testing equality of means.

Prob > Chisq represents P-value for testing equality of medians (Kruskal-Wallis Test)

Table 2-4
Pairwise Comparisons for Groups of Firms Classified by Ownership or Type of Antitakeover Device
Panel 6

Dual-Class Restructurings vs. Non-Fair-Price Charter Amendments									
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.4780	0.9395	0.4696	0.2163	0.2620	0.2043	0.1614	0.0213	0.1935
Prob>Chisq	0.6405	0.6452	0.2374	0.0477	0.4574	0.1799	0.1035	0.0591	0.8154
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.0548	0.5169	0.1256	0.6623	0.4233	0.7566	0.9243	0.9512	0.2193
Prob>Chisq	0.0954	0.9249	0.1689	0.2801	0.7013	0.8066	0.8113	0.8966	0.2384
Fair-Price Charter Amendments vs. Non-Fair-Price Charter Amendments									
	Operating Income			Sales Growth			Employment Growth		
	Divided by Assets								
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.9839	0.5568	0.4356	0.3488	0.2862	0.7567	0.6882	0.9501	0.6908
Prob>Chisq	0.5436	0.6411	0.0938	0.1328	0.2313	0.0266	0.3795	0.8305	0.5308
	Capital Expenditures			Research and Development			Cash-Flow Plowback		
	Divided by Assets			Divided by Assets					
	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)	Pre-Event Period	Post-Event Period	Difference (Post-Pre)
Prob > F	0.9443	0.0636	0.1756	0.5941	0.9111	0.6395	0.8625	0.9329	0.3313
Prob>Chisq	0.9767	0.1518	0.5396	0.0889	0.6065	0.2092	0.7091	0.3878	0.8277

Prob > F represents P-value for testing equality of means.

Prob > Chisq represents P-value for testing equality of medians (Kruskal-Wallis Test)

Table 2-5
Regression Results
Panel 1

Intercept	Insiders Own 25% or more	Poison Pill Adopted	Poison Pill * Insider Own	Defensive Restructuring	Antitakeover Charter Amendment Adopted	Amendment * Insider Own	Fair-Price Amendment Adopted	Fair-Price Amendment* Insider Own	R-Squared	Prob > F	N
Dependent Variable: Operating Income Divided by Assets Pre-Event											
OLS Regression Results:											
-0.0692	0.0868	0.0723	-0.1059	0.0614	0.0644	-0.0880	0.0107	-0.0491	0.0292	0.0021	821
0.0003	0.0011	0.0003	0.0006	0.0275	0.0057	0.0114	0.4845	0.0815			
Stepwise Regresion Results:											
Full model accepted using forward selection											
Dependent Variable: Operating Income Divided by Assets Difference (Post-Pre)											
OLS Regression Results:											
-0.0065	-0.0186	-0.0110	0.0334	-0.0148	-0.0075	0.0498	-0.0025	-0.0205	0.0080	0.7320	661
0.7390	0.4819	0.5894	0.2842	0.6246	0.7490	0.1450	0.8686	0.4512			
Stepwise Regresion Results:											
-0.0170			0.0143			0.0342		-0.0230	0.0071	0.1989	661
0.0001			0.3734			0.0549		0.3090			
Dependent Variable: Sales Growth Pre-Event											
OLS Regression Results:											
0.1301	0.0016	-0.0893	0.0150	-0.1484	-0.0059	-0.0027	-0.0742	0.1224	0.0159	0.0970	847
0.0439	0.9857	0.1791	0.8840	0.1076	0.9394	0.9816	0.1461	0.1948			
Stepwise Regresion Results:											
0.1275		-0.0850		-0.1458		-0.0044	-0.0775	0.1257	0.0157	0.0202	847
0.0001		0.0145		0.0454		0.9486	0.0564	0.1582			
Dependent Variable: Sales Growth Difference (Post-Pre)											
OLS Regression Results:											
-0.1110	-0.0168	0.0497	0.0382	0.1223	-0.0149	0.0352	0.0433	-0.1093	0.0069	0.7910	684
0.2331	0.8928	0.6047	0.7928	0.3962	0.8921	0.8258	0.5295	0.3861			
Stepwise Regresion Results:											
-0.1198		0.0607		0.1311			0.0372	-0.0909	0.0067	0.3355	684
0.0016		0.1670		0.2588			0.4714	0.2358			

*Independent variables with an asterisk indicate interaction dummy variables.
Regression results reported are estimated coefficients with p-values below.

Table 2-5
Regression Results
Panel 2

Intercept	Insiders Own 25% or more	Poison Pill Adopted	Poison Pill * Insider Own	Defensive Restructuring	Antitakeover Charter Amendment Adopted	Amendment * Insider Own	Fair-Price Amendment Adopted	Fair-Price Amendment* Insider Own	R-Squared	Prob > F	N
Dependent Variable: Employment Growth Pre-Event											
OLS Regression Results:											
0.0866	-0.0108	-0.0467	-0.0148	-0.0999	-0.0541	0.0495	0.0078	0.0382	0.0146	0.1586	809
0.0285	0.8455	0.2508	0.8140	0.0740	0.2540	0.4859	0.7984	0.4948			
Stepwise Regresion Results:											
0.0411	0.0322		-0.0590	-0.0544				0.0438	0.0128	0.0343	809
0.0001	0.2394		0.1304	0.1758				0.2734			
Dependent Variable: Employment Growth Difference (Post-Pre)											
OLS Regression Results:											
-0.0340	-0.0549	-0.0416	0.1627	0.0647	-0.0314	0.0746	0.0150	-0.1134	0.0138	0.3480	648
0.6023	0.5436	0.5381	0.1227	0.5226	0.6876	0.5159	0.7619	0.2056			
Stepwise Regresion Results:											
-0.0548		-0.0209	0.1078	0.0854				-0.0893	0.0130	0.0761	648
0.0031		0.4087	0.0462	0.2812				0.0851			
Dependent Variable: Capital Expenditures Divided by Assets Pre-Event											
OLS Regression Results:											
-0.0104	-0.0038	0.0154	-0.0018	0.0236	0.0072	0.0280	0.0077	-0.0203	0.0128	0.2458	806
0.3329	0.7973	0.1628	0.9140	0.1275	0.5759	0.1466	0.3688	0.1963			
Stepwise Regresion Results:											
-0.0054	-0.0087	0.0104	0.0031	0.0186		0.0352	0.0100	-0.0225	0.0124	0.1901	806
0.3668	0.4573	0.1115	0.8294	0.1415		0.0141	0.1885	0.1370			
Dependent Variable: Capital Expenditures Divided by Assets Difference (Post-Pre)											
OLS Regression Results:											
-0.0031	0.0118	-0.0070	-0.0135	-0.0106	-0.0030	-0.0288	0.0088	0.0038	0.0147	0.3053	643
0.7987	0.4714	0.5739	0.4827	0.5674	0.8327	0.1716	0.3502	0.8219			
Stepwise Regresion Results:											
0.0033		-0.0136		-0.0170	-0.0103	-0.0147	0.0099		0.0138	0.1140	643
0.6838		0.1188		0.2965	0.3379	0.0728	0.2016				

*Independent variables with an asterisk indicate interaction dummy variables.
Regression results reported are estimated coefficients with p-values below.

Table 2-5
Regression Results
Panel 3

Intercept	Insiders Own 25% or more	Poison Pill Adopted	Poison Pill * Insider Own	Defensive Restructuring	Antitakeover Charter Amendment Adopted	Amendment * Insider Own	Fair-Price Amendment Adopted	Fair-Price Amendment* Insider Own	R-Squared	Prob > F	N
Dependent Variable: Research and Development Expenditures Divided by Assets Pre-Event											
OLS Regression Results:											
0.0299	-0.0456	-0.0322	0.0512	-0.0315	-0.0269	0.0546	-0.0070	0.0145	0.0422	0.0111	465
0.0032	0.0053	0.0021	0.0057	0.0258	0.0303	0.0073	0.4119	0.3347			
Stepwise Regresion Results:											
-0.0010						0.0177			0.0164	0.0057	465
0.6289						0.0057					
Dependent Variable: Research and Development Expenditures Divided by Assets Diference (Post-Pre)											
OLS Regression Results:											
-0.0065	0.0136	0.0084	-0.0053	0.0098	0.0054	-0.0199	0.0011	0.0068	0.0112	0.8672	350
0.4530	0.3160	0.3484	0.7396	0.4852	0.6014	0.2356	0.8735	0.5757			
Stepwise Regresion Results:											
-0.0007		0.0026	0.0083						0.0057	0.3729	350
0.7688		0.4366	0.3218								
Dependent Variable: Cash-Flow Plowback Pre-Event											
OLS Regression Results:											
0.0637	-0.0385	-0.0377	0.0117	-0.0686	-0.0179	0.0597	-0.0266	0.0714	0.0079	0.9795	265
0.5431	0.8263	0.7280	0.9520	0.6274	0.8883	0.7747	0.7580	0.6136			
Stepwise Regresion Results:											
0.0245						0.0698			0.0055	0.2276	265
0.2297						0.2276					
Dependent Variable: Cash-Flow Plowback Difference (Post-Pre)											
OLS Regression Results:											
-0.0828	0.0969	0.0814	-0.0934	0.1025	0.0762	-0.0557	-0.0141	-0.0415	0.0200	0.9136	170
0.1579	0.2949	0.1817	0.3815	0.3121	0.2814	0.6169	0.7623	0.5762			
Stepwise Regresion Results:											
-0.0020							-0.0187		0.0038	0.4228	170
0.8763							0.4228				

*Independent variables with an asterisk indicate interaction dummy variables.
Regression results reported are estimated coefficients with p-values below.

Chapter 3: Corporate Performance and Large Shareholders[1]

Canada has come full circle. What began as an area controlled by the Hudson's Bay Company and the North West Company has ended up as a country that is little more than a collection of financial franchises. Competition among Canadian capitalists rarely breaks out in the absence of any meaningful combines laws within or foreign rivalry from without. This means that instead of a lively, competitive marketplace yielding jobs, innovations, or new opportunities for entrepreneurs, Canada has far too many cash cows controlled by far too few proprietors. The result is that whether buying beer or tranquilizers, eyeglasses or shopping centre space, Canadian consumers pay too much. Like economic serfs, we are paying private sector surcharges, levied by a diminishing number of families and faceless conglomerates, on just about everything.

Diane Francis, *Controlling Interests: Who Owns Canada?*

(Macmillan, Toronto, 1986, p. 3)

3.1 Introduction and Summary

Large American firms tend to be widely held. Large Canadian firms tend to have dominant or even majority shareholders. In both countries, the *status quo* is criticized.

Concerns about widely-held firms has an older and perhaps nobler pedigree - Adam Smith wrote critically of joint stock companies in *The Wealth of Nations* in 1776[2]. Many mainstream economists, as well as critics of corporate America, have expressed concern that managers in a widely-held corporation can be neither monitored nor controlled by the small,

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2 For example, Smith writes of widely-held joint stock companies "The directors of such companies, however, being managers rather of other people's money than of their own, it cannot be well expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company." in *The Wealth of Nations*. Page 700 of the 1776 Cannon Edition by the Modern Library, New York, 1937.

widely dispersed and often unsophisticated shareholders who are the ultimate owners of the firm. Managers, it follows, are free to abuse their positions of fiduciary trust and to promote their own interests, rather than those of the shareholders. This divergence of interests between managers and shareholders is thought by many financial economists to be at the heart of key inefficiencies in the U.S. economy[3]. Large sophisticated shareholders are seen as a potential check on this problem in that they have the resources and the incentive to keep management on track.[4]

In Canada, however, large shareholders are much more commonplace. Critics of the *status quo* here, such as Diane Francis in the introductory quote, argue that Canadian corporate ownership patterns lead to an unhealthy and undemocratic concentration of economic power. Thus, popular writers such as Peter Newman argue that because of this concentrated ownership, Canada is "disproportionately influenced by the existence of an establishment"[5]. On a more concrete level, managers who control large blocks of shares might come to view their firms as personal fiefdoms. If they fail to act in their shareholders' interests, it may be difficult to dislodge them and the economy may suffer[6]. Presumably

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3 See Berle and Means (1932), Jensen and Meckling (1976), Jensen (1988) and others.

4 See Shleifer and Vishny (1986) for a model. McConnell and Servaes (1990) find that, in the U.S., this effect is limited to institutional owners. Holderness and Sheehan (1988) find that firms whose dominant shareholders are individuals tend to underperform similar widely-held firms, while firms whose dominant shareholders are other firms do not.

5 The Canadian Establishment, Volume II, p. 11.

6 Higher degrees of ownership by management may help to align their incentives with shareholders. On the other hand, the higher the degree of ownership, the more entrenched management becomes. Morck *et al* [1988b] find a positive relationship between insider ownership and performance for low levels of ownership, a negative relationship for low medium levels of ownership, and a positive relationship for high levels of ownership. They attribute these findings to an interaction of incentive alignment and entrenchment effects.

reflecting some mixture of these concerns, Canadian federal and provincial governments have included poison pill clauses in the corporate charters of many privatized crown corporations to ensure that they remain widely held[7]. Many economists are also skeptical that highly concentrated ownership leads to greater concern for the interests of small shareholders[8]. Indeed, a main concern of Canadian securities regulators is to protect minority shareholders from abuse by large shareholders.[9]

Empirical studies suggest that both effects may be present in the economy, and that either too little or too much insider ownership can be associated with poor financial performance. A theoretical framework in which both effects are modeled is presented in Stulz (1988). The definitions of "too little" and "too much" depend on the nature of the firm and the definition of "insider". Morck, Shleifer and Vishny (1988) examine large firms using a very restrictive measure of insider ownership, and find that financial performance is highest at five percent insider ownership. McConnell and Servaes (1990) look at a sample that includes many smaller firms and, using a much broader definition of insider than that used by Morck, Shleifer and Vishny (1988), find that financial performance is best with insider ownership at forty-five percent.

The "competitiveness" of Canadian firms has become a major concern, particularly with the easing of North American and international trade barriers. Since corporate

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7 Examples include PWA corp, Air Canada, and many others. Canadian banking regulations also limit the stakes of shareholders, essentially resulting in poison pills

8 See Demsetz (1983) for an overview, Shleifer and Vishny (1988) for a model of managerial entrenchment is discussed, and Johnson *et al.* (1985) for empirical evidence.

9 Abuse may take the form of shirking or consuming excessive perquisites. As long as the large shareholder does not own 100% of the firm's stock, he or she does not bear 100% of these costly activities. See Jensen and Meckling [1976] for a formal model of the manager/shareholder agency problem.

performance within the U.S. appears to be related to corporate ownership structure, it is reasonable to ask whether or not differences in ownership structure between Canadian and U.S. firms might be related to the "competitiveness" of Canadian firms relative to their U.S. peers.

This paper uses firm and industry level data to explore possible causes and consequences in terms of corporate performance of systematic differences between the ownership structures of Canadian and U.S. firms. Our main findings are that Canadian firms in general trail their U.S. rivals in profitability, but appear to be growing at a faster rate. Both the profitability gap and higher growth are due primarily to closely-held Canadian firms. Firms dominated by the descendants of their founders have the lowest profitability margins and barely match their U.S. counterparts in growth. Founder-owned firms have the highest growth and do not lag their U.S. rivals' profitability, while other closely-held firms have intermediate (negative) profitability margins and intermediate (positive) growth margins. Widely-held firms, in contrast, are matching the profitability and growth rates of their U.S. rivals.

We conclude that, at least in part, the large shareholdings in Canadian firms are to be expected in a younger, smaller economy. To the extent that large shareholdings reflect a more entrepreneur-run corporate sector, they ought not to be seen as a corporate governance problem. However, Canadian firms-held by their founders' heirs are performing especially poorly. This raises the possibility that differences between the U.S. and Canada that allow Canadian heirs to retain control longer might be a competitive disadvantage to Canada. The relatively lax trust busting policy and the broader use of differential voting shares in Canada

are two such differences.

The rest of chapter 3 is organized as follows. In section 2, we discuss institutional and historical reasons for the different ownership structures. In section 3 we present the variables studied and their data sources. Following this is a description of the methodology used to study the variables (section 4) and the empirical results (section 5). As we analyze the empirical results we continually ask whether or not the different performance outcomes can be explained by the different ownership structures. Section 6 concludes.

3.2 Background Information

We classify a firm as being *closely held* if any single shareholder has more than 20% voting control. We refer to the largest shareholder in a closely-held firm as its *dominant shareholder*. Firms that are not closely held are referred to as *widely held*.

3.2.1 Overview

In 1989, fewer than 16% of the largest 550 Canadian firms (which comprise our sample) could be classified as widely held. When crown corporations and subsidiaries are excluded, this figure rises to 29%. Excluding government corporations and wholly owned subsidiaries, the average voting control of the largest shareholder is 49.5%. Including government controlled firms and wholly owned subsidiaries raises this to 67%.

In contrast, Demsetz and Lehn (1985), using similar criteria, classify almost 50% of their sample of 511 large U.S. firms as widely held. They find that the combined holdings of the largest five shareholders average less than 25% of voting control.

In part, this may be because the largest U.S. firms are much larger than the largest Canadian firms. It is simply more difficult for a single investor to acquire a sizable percentage

of the stock of a top U.S. company. Also, the largest Canadian firms may also be distributed differently across industries. Some industries, newer ones for instance, may be characterized by a higher incidence of large shareholdings.[10]

We begin with a rough comparison that takes into account the different size and industry distributions of large Canadian and U.S. firms. Figure 3-1 compares the 1989 ownership structures of the fifty largest independent for-profit Canadian firms (ranked by total sales), first with the ownership structures of the fifty largest U.S. firms, and then with the ownership structures of a control group of fifty U.S. firms matched by size and industry with the top fifty Canadian firms[11]. Figures 3-1a and 3-1b, as expected, show that the fifty largest Canadian companies are clearly much more closely-held than the fifty largest U.S. firms. The Canadian firms are almost evenly distributed across the spectrum of possible largest owners' stakes. In contrast, the top fifty U.S. firms are mostly widely held.

Figure 3-1c displays the ownership structure of fifty U.S. firms chosen to match the top fifty Canadian firms in size (measured by total sales) and industry (using Standard Industrial Classification or SIC codes)[12]. A comparison of figures 3-1a and 3-1c shows that on average large Canadian firms are not more closely-held than U.S. firms of the same size

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[10] In theory, a better gauge of this effect might be a measure of the age of a firm. In practice, it is difficult to construct a meaningful measure of a firm's age because of factors such as reincorporations, mergers, divestitures, entry into new industries, etc.

[11] Sales figures for the top 50 Canadian corporations are from the Financial Post 500 for 1989 and are verified using data from the *Toronto Globe and Mail* Infoglobe Report on Business database. Sales figures for the U.S. firms are from the 1989 Fortune 500 listings and are supplemented with *Forbes Magazine's* listing of the top 400 private U.S. corporations for 1989. Ownership stakes for Canadian firms are from the Financial Post 500 listing. Those for U.S. firms are from the Spectrum database. Both are cross checked with proxy statements and corrected where necessary.

[12] An algorithm to convert Canadian codes to U.S. codes was necessary because the two countries' SIC systems are slightly different.

in the same industries. The average largest stake in the top fifty Canadian firms is almost identical to that for the matched U.S. firms in figure 3-1c: about 41%. However, the differences in ownership patterns do not disappear entirely. Using the criterion above, 32% of the top 50 Canadian firms versus 50% of the U.S. control firms can be classified as widely held. This suggests that a "firm size" effect may be intertwined with a relationship between ownership structure and performance relative to U.S. industry rivals.

Such an effect makes intuitive sense because firm's ownership structures tend to evolve in similar ways as firms grow. Young firms that are included in our sample of large firms are likely to be dynamic, entrepreneurial firms. Their founders are likely still to be in charge and in possession of dominant equity positions. These are also likely to be the smaller firms in our sample of large firms. In time, the entrepreneur/founder passes from the scene and control is transferred to an heir or other successor. Or, the firm may grow large enough that no single shareholder can own a dominant fraction of its equity without being unacceptably undiversified, and thus become widely held.

With this in mind, we now turn to institutional and historical factors that might affect this *corporate life cycle* differently in Canada as opposed to the U.S.

3.2.2 Historical and Institutional Factors

In this section we discuss differences between Canadian and U.S. economic history and institutional environments that might be related to systematic differences between the two countries' corporate ownership structures. We deal with the historical issues first.

We pointed out above that the largest firms in the U.S. are much larger than the largest firms in Canada. Another difference that may be just as important is that they are also

much older. The United States developed large scale industry long before Canada did. Many of its large firms pre-date Canada's by a generation or more. While the 1830's saw rapid railroad building in the U.S., the last spike of the Canadian Pacific Railway was not driven until 1885. In 1849 there were still only 66 miles of railway operating in what would become Canada.

> The age of Carnegie and Rockefeller and J.P. Morgan and young Henry Ford in the United States, from 1875 to 1910, was in Canada still the age of the general storekeeper on the prairies, sawmills in the Gatineau, shoe factories in Quebec and textile mills and candy factories in New Brunswick.
>
> Bliss (1987) p. 287.

With a few exceptions, such as the government organized Canadian Pacific Railway and the Hudson's Bay Company, most large Canadian firms were originally founded and owned by entrepreneurs[13]. When an entrepreneurial founder dies, the heirs may have neither the desire nor the ability to manage the firm. Financial prudence suggests that diversified holdings are preferable to having all one's wealth invested in one firm. Thus the heirs may sell out in a public offering, as was the case with Seagram's Corporation in 1926, and the firm can become widely held. (Sam Bronfman bought the newly public firm in 1928.) A public offering of shares may also be a way to raise capital if the founding family is unable to borrow on acceptable terms. This was the motive for Labatt's initial public offering in 1945. The firm had been privately-held by the Labatt family since its founding in 1847.

Many U.S. firms show a similar pattern of development. As in Canada, a few firms such as I.B.M. and Texaco were widely-held from their inception. Others had founders that

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[13] The historical information below is obtained from the *International Directory of Company Histories*, published by Reference Publishers International Inc., Chicago, 1988. This is supplemented with individual company histories.

eventually sold out. For example, Procter and Gamble was founded in 1837 as a partnership. It went public in 1890 to raise capital. The Ford Motor Company first issued shares to the public in 1956 as Henry Ford's descendants withdrew from management, although the family retains a large block of equity.

Given that large scale industry became established much earlier in the U.S. than in Canada, we should expect to observe more widely-held firms there. In the typical U.S. large firm, there has been more time for founding families to sell their equity inheritances to diversify their wealth. There should be a "firm age" effect related to ownership structure in addition to the "firm size" effect discussed above.

However, there are institutional differences between the two countries that may affect the way firms evolve through their corporate life cycles. Founders and their heirs in the U.S. had a powerful additional incentive to sell their equity holdings: the trust busting policy of the U.S. government. Standard Oil Company and Trust was dominated by J.D. Rockefeller who founded it in 1870. In 1911 the U.S. Supreme Court ordered it broken up into the companies that became Exxon, Mobil, Amoco, and Chevron, and set in motion a process that led to their becoming widely held. General Motors became widely held in 1951 when the Du Ponts were ordered to sell out as part of an antitrust settlement. Boeing became widely-held when William Boeing, its founder, sold out in disgust after a Senate Committee raised questions about the ethics of his financial dealings. In contrast, the Canadian government has refrained from enacting legislation that would pressure dominant shareholders to sell out.

Of course, the founding family does not always sell out. Both countries have large firms that continue under the control of their founding families. George Weston, Thomson,

Steinberg, the Oshawa Group and many other large Canadian firms have remained privately held. Cargill Corporation was the seventh largest Company in the U.S. in 1989, and is wholly owned by its founding family. Until the late 1980's, Du Pont Corporation, the tenth largest, remained closely held by the family of its founder - Eleuthere Irenee Du Pont de Nemeurs, an 18th century immigrant to the U.S..

In these firms, the founding families presumably retain control because it is in their interest to do so. The value of continuing family ownership exceeds the cost of being undiversified. This is likely to be the case where the family continues to provide innovative leadership. However, it may also be due to family members who gain utility from being in control even though their management skills no longer add value to the firm.

A second institutional factor that may affect ownership structure is the wide use of restricted voting and super-voting shares in Canada in contrast with their more limited use in the United States. We argued above in our discussion of the corporate life cycle that a firm becomes widely-held when it has grown so large that no single shareholder can hold a dominant equity stake without becoming unacceptably undiversified. A firm can delay this by using debt financing as much as possible, but eventually an equity issue must be used or growth opportunities must be passed by[14]. By issuing shares with restricted voting rights to the public, or by issuing shares with more than one vote per share to insiders, the dominant owners of Canadian firms can use equity financing without giving up control. Figure 3-1c shows that the group of 50 U.S. firms chosen to match the top 50 Canadian firms in size and

[14] High debt levels may increase the expected costs of financial distress. In addition, high debt levels may give management (and other shareholders) an incentive to take on very risky projects because the shares are essentially call options on the firm's assets and their value can be increased by increasing the risk of the underlying assets. Because of these problems there are limits on the use of debt financing.

industry actually have a *higher* incidence of 91% to 100% ownership by the largest shareholder. Thus, dominant shareholders in the U.S. are more likely to either sell out entirely or retain complete ownership while those in Canada are more likely to have large positions that fall short of complete ownership. This would be expected if Canadian dominant shareholders use differential voting shares to retain corporate control. On the plus side, differential voting stock may allow firms controlled by entrepreneurial families more scope to grow. On the minus side, it may prolong control by inept heirs. Which effect dominates is an empirical question.

3.2.3 A More Entrepreneurial Economy or a Family Compact?

Because large Canadian firms are smaller and younger than large U.S. firms, and because of the trust busting zeal of the U.S. authorities and the acceptance of differential voting stock in Canada, we should expect founder control to be much more common among Canada's largest firms than among the top U.S. firms. This is the case. About 9% of the Canadian firms in this study have founders as their dominant shareholders, and this rises to 14% when government corporations and wholly owned subsidiaries are excluded. In contrast, a comparable figure for U.S. Fortune 500 firms is 5%[15]. The incidence in our Canadian data of either a founder or founder's heir as the dominant shareholder is about 20% of the whole sample, or 30% when government firms and subsidiaries are dropped.

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[15] This figure is from the data used in Morck, Shleifer and Vishny (1988), who find that younger firms with a member of the founding family on the board surpass the financial performance of their industry rivals while older firms with founding family representatives on the board do not. This can be interpreted as suggesting that control by an entrepreneur/founder improves performance while control by an heir does not. It is the fraction of Fortune 500 firms that had a member of the founding family on the board and that were founded after 1949. While this is not precisely comparable to the number mentioned above for Canadian firms, it indicates the low incidence of founder run firms in the U.S. Fortune 500.

To the extent that the closely-held nature of Canadian business reflects a younger, more entrepreneurial corporate sector, it is not a public policy problem. The U.S. economy may simply be more mature in the sense that more firms have passed from entrepreneurial control to diffuse ownership. To the extent that the more narrow ownership of large Canadian firms reflects institutional features that allow insiders to remain in control long after they have ceased to provide entrepreneurial leadership, it is a matter of some concern.

3.3 Variables and Data Sources

3.3.1 The Sample

Our sample of firms begins with the largest 550 firms in 1989, ranked by sales as listed in the *Financial Post* magazine. The fraction of votes controlled by the largest shareholder could be calculated for 533 of these firms. The fraction of each firm's dividends paid to this shareholder is also estimated. The two are often not the same because of differential voting shares. This sample is reduced to 345 firms after the elimination of firms for which no financial data were available in the *Toronto Globe and Mail's* InfoGlobe database. Cook's D tests were used to remove outliers from the sample, further reducing it to 327 firms. In many of the tests below, we drop government owned firms and fully owned subsidiaries, leaving a sample 180 firms. This sample is further reduced in tests where an additional year of financial data is required and because of additional gaps in the InfoGlobe database.

3.3.2 Measuring "Competitiveness"

The *competitiveness* of domestic firms is somewhat loosely used term that is invoked when comparisons are being made between domestic firms and their foreign rivals. Measuring corporate performance relative to foreign rivals rather than to an absolute standard

or to domestic rivals is especially important in a relatively small, open economy such as Canada.

To tighten its meaning, we associate the term with three dimensions of the performance of domestic firms relative to their foreign competition:

1). *Profitability Margin.* To compete against foreign firms, a Canadian firm must clearly maintain a healthy level of cash flows relative to its rivals. We define a firm's *profit rate* as its operating income (earnings gross of depreciation, interest and tax payments) per dollar of sales. This data is obtained from the *Toronto Globe and Mail* InfoGlobe database. We include depreciation and interest payments because we are interested in the overall rate of return the firms' business activities yield. We leave issues about the use firms make of these cash flows for future research (i.e. whether they are paid to bondholders as interest or to shareholders as dividends, or reinvested in new plant and equipment). Since different industries experience different economic pressures, it is important to measure competitiveness industry by industry. Thus, we define the *profitability margin* of a Canadian firm as its profit rate minus the profit rate of the U.S. industry with which it competes. Although in many industries other foreign firms may be important competitors, we focus on U.S. firms because comparable data for a complete listing of important non-American rivals is not readily available. We recognize this as a shortcoming of this study and are investigating ways to include a broader measure of international competition in future work.

Industry classifications are made using the Standard Industrial Classification (SIC)

codes system of Standard and Poor's *Compustat* data base[16]. U.S. rivals are defined as all U.S. firms belonging to the same industry (defined by 3 digit SIC codes) as the Canadian firm. For each set of U.S. rivals we construct an industry profit rate by adding up the total operating income of the firms and dividing this by the total of their sales. U.S. financial data is obtained from the Standard and Poor's *Compustat* database. To minimize the importance of differences between the accounting rules of the two countries we use sales rather than total assets as the divisor[17]. We use industry aggregate profit rates rather than an average of firm level data because the Canadian firm must compete with all its foreign rivals, not an average foreign rival.

Thus if the profitability margin of a Canadian firm is 1.5%, this means that its profit unadjusted rate minus that of its U.S. rivals is 1.5%. In this example, the Canadian firm might have a profit rate of 6% and the U.S. industry as a whole might have an aggregate profit rate of 4.5%.

2). *Sales Growth Margin*. Another aspect of firm performance that is related to the loose term "competitiveness" is its *sales growth rate*. Again, since different industries may be subject to different conditions, we define a firm's *sales growth margin* as its sales

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16 Many of our Canadian firms are not included in Compustat. For these, an industry classification was found in Dunn and Bradstreet's Canadian Directory. Since the industry codes used by Dunn and Bradstreet are not identical to those used by *Compustat*, a conversion table was worked out using firms listed in both. The first three industry codes (in declining importance by sales in that industry) from Dunn and Bradstreet were used in deriving the conversion table.

17 In chapter one we find that sales are more volatile than assets and thus operating income divided by sales will tend to be more volatile than the equivalent variable divided by assets. For the Canadian firms this problem seems to be magnified. To reduce distortions caused by extraordinary events or macroeconomic factors, we smooth our measure by taking the median of the industry adjusted profit rates between 1984 and 1989 for each Canadian firm. Since this often involves six observations, an even number; after ordering the observations we define their median as the half-way point between the third and fourth observations.

growth rate minus the aggregate sales growth rate of the U.S. industry with which it competes. As with profitability margins, we smooth our sales growth margins by taking a median from 1984 through 1989. This again is to remove the effects of unusual years or macroeconomic factors. Sales data for Canadian firms is from the *Toronto Globe and Mail* InfoGlobe database, while that for U.S. rivals is from the Standard and Poor's Compustat tapes.

3). *Job Creation Margin*. Growth between 1984 and 1989 in the *number of employees* working for the firm is defined as the firm's *job creation rate*. The firm's *job creation margin* is its job creation rate minus the job creation rate of the U.S. industry with which it competes. Again, the numbers reported below are smoothed by taking the median job creation margin over the period from 1984 to 1989. Data are from the same sources as for the sales growth margins.

We use the term *performance margins* to refer collectively to these three performance measures[18]. Univariate statistics for these measures are given in table 3-0. Financial data and other data for constructing these measures were obtained from the InfoGlobe Report on Business data base, produced by the *Toronto Globe and Mail*. U.S. data were obtained from Standard and Poor's *Compustat* database. Figures that seemed unusual or extreme were verified using annual reports, the *Financial Post Survey of Industrials*, or the *Financial Post Survey of Energy and Mining Companies*; and were corrected if necessary.

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[18] Missing from this list is a measure of stock market valuation. Many of the Canadian firms we study have one or more classes of equity that do not trade publicly. It is not possible to reliably estimate market value variables such as *q* ratios for these firms. Excluding these firms would result in a very unrepresentative picture of the Canadian economy. There are not enough changes in ownership structure to allow an event study framework to be used. We therefore do not attempt to assess the effect of large shareholders on stock market valuation.

High profits, rapid sales growth and job creation are taken as indicating "good" performance. However, these performance measures must be interpreted with some care. High profits per dollar of sales relative to U.S. rival industries probably means the firm is well run. However, a low value for this variable might be due to a recent expansion into new markets that are not yet profitable. High sales or employment growth relative to rival U.S. industries are taken as signs of good management. But sometimes rapid growth might be due to questionable management decisions. For example an overly ambitious acquisition program might cause serious long term problems, but would produce high sales and labor force growth for a few years.

In general, though, these measures capture something of the essence of the loosely used term "competitiveness."

3.3.3 Corporate Life Cycle Variables

The discussion of issues relating to the corporate life cycle in section 3.2 suggests that a "firm size" effect and a "firm age" effect may be intertwined with whatever relations there might be between corporate ownership structure and performance. Thus, when comparing a firm's performance to that of its U.S. industry rivals, we must consider a "firm age" effect in addition to the "firm size" effect discussed in the previous section.

We use the logarithm of a firm's total sales as a measure of firm size. This is obtained from the *Toronto Globe and Mail* InfoGlobe database along with our other Canadian financial variables. We use the logarithm of the number of years since the firm's first incorporation date as a measure of firm age. This date is obtained from the *Blue Book of Canadian Business, Who's Who*, financial reports and corporate histories.

These variables are very imperfect controls for corporate life cycle effects. First, they are imperfect even as measures of size and age. Second, they clearly cannot be exogenous in any model of firm performance. Corporate growth, an important aspect of firm performance, affects firm size, and profitability, another key performance measure, clearly affects a firms ability to survive, and hence its age.

In addition, there is a more basic sense in which corporate life cycle issues, despite their importance in explaining performance differences between Canadian and U.S. firms, are irrelevant. For example, in the econometric analysis below, we find that firms held by founders' descendants tend to perform poorly. Even if this result disappeared when controls for firm size and firm age were included (it doesn't), there is still a public policy argument for legislation to dislodge heirs and push the firm along to subsequent stages in its life cycle more rapidly.

Thus, we begin each section of our econometric analysis with simple comparisons of performance margins across firms with different types of ownership structure. Corporate life cycle variables are presented as well, and performance margin comparisons controlling for them follow.

3.4 Methodology

For each firm, the total number of shareholder votes is calculated assuming that all warrants, convertibles and stock options have been exercised. Where more than one shareholder is listed as having voting control over a trust we assign each an equal proportion of the votes.

The total number of votes controlled by the largest shareholder is calculated in a

similar way. This is divided by the total number of votes to obtain an estimate of the largest shareholder's voting power.

Recall that we define a firm as having a dominant shareholder if the largest single shareholder owns or controls more than 20% of total voting rights. A firm is classified as closely-held if it has a dominant shareholder, otherwise it is classified as widely held. The name of each dominant shareholder is obtained from the Financial Post 500 listings. This information is verified and, where necessary, corrected by cross-checking with proxy statements and the *Compact Disclosure* (Canadian) C.D. data base.

The following sections, and tables 3-1 through 3-5 at the end of the chapter, compare the performance margins, as defined above, of Canadian firms with various types of ownership structures. In part "a" of each table, mean and median performance margins are examined for groups of Canadian firms with different types of ownership structures. This shows which types of ownership structures are associated with superior or inferior performance relative to competition from the U.S. Part "b" of each table displays tests that compare the means and medians of these performance margins across subsamples. The F-test shown is the standard test for comparing the means of two subsamples. Kruskal-Wallis tests compare the medians of the two subsamples using rank transformations of the data. Finally, part "c" of each table shows regressions of performance margins on ownership structure indicator variables with firm size and firm age included as control variables.

3.5 Empirical Results

3.5.1 Canadian Firms vs. their Rival U.S. Industries

The first section of table 3-1a compares the performance of our entire sample of Canadian firms, including government and foreign owned companies, to that of their rival U.S. industries. In general, our Canadian firms appear to be growing faster than their rival U.S. industries, but have lower operating income per dollar of sales than do rival U.S. industries.

For example, the first number in the third column of table 3-1a (i.e. operating income per dollar of sales) is -.049%, indicating that the mean profitability margin, that is - the difference between the operating income as a percentage of sales of our large Canadian firms and that of their rival U.S. industries, is -.049. Below, the number -1.29% is the median profitability margin.

The numbers in parenthesis below the mean and median profitability margins are the probability levels at which one can reject the hypotheses that the mean and median operating income per dollar of sales respectively of the Canadian firms are indistinguishable from those of their rival U.S. industries. The .92 indicates that using a standard t-test, we can not reject the hypothesis that the mean profitability margin is zero. In contrast, the .03 below the median difference indicates that, using a signed rank test, the hypothesis of equal medians can be rejected at a confidence level of .03.[19]

Unadjusted firm age (years since first incorporation) and firm size (total sales in 1989)

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[19] Neither test is entirely interpretable within the framework of classical statistics, since the observations themselves are medians of other variables. This means significance levels are probably overstated.

are also given for each group.

3.5.2 Independent Firms, Subsidiaries, and Crown Corporations

Foreign owned subsidiaries and state-owned firms are both important ownership structure groups in Canada. The economic, historical and political reasons for this are complex and beyond the scope of this study.[20]

Firms whose dominant shareholders are governments, other Canadian firms or foreign firms are identified using data in the *Financial Post* magazine. This is cross checked with Statistics Canada's *Directory of Intercorporate Ownership* and with proxy statements. Our sample includes 106 firms whose dominant shareholders are foreign corporations, 17 firms whose dominant shareholders are other Canadian firm, and 60 firms in which governments are dominant shareholders. This leaves 180 independent Canadian firms. For simplicity, we will use the term *foreign owned subsidiaries* to refer to all firms with foreign firms as dominant shareholders, even though only 74% of these are fully owned subsidiaries. Similarly, all firms with Canadian firms and governments as major shareholder are referred to as *Canadian owned subsidiaries* and *crown corporations* respectively.

The second section of table 3-1a compares the performance of Canadian firms having foreign firms as dominant shareholders to that of corresponding U.S. industries. Foreign ownership appears to be related to lower profitability relative to U.S. rival industries. A comparison of performance margins between foreign dominated firms and independent private-sector Canadian firms in table 3-1b shows that the formers' profitability margins are close to being significantly lower than the latters' in terms of medians (prob > χ^2 = .11), but

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[20] See Bliss (1987).

insignificantly different in terms of means (prob > F = .27). Since corporate taxes in Canada are higher than in many other countries, especially the United States, it is reasonable to expect multinationals to use transfer pricing and other income shifting strategies to move taxable income out of Canada.

Returning to table 3-1a, foreign controlled subsidiaries are indistinguishable from rival U.S. industries in terms of sales growth, but are growing more rapidly in terms of employment. In contrast, independent private sector Canadian firms are growing significantly faster than their rival U.S. industries in terms of both sales and labor force. In table 3-1b, sales growth margins for independent private-sector firms are greater than those of foreign owned subsidiaries in terms of both means (prob > F = .11) and medians (prob > χ^2 = .10). The difference in job creation margins between the two subsamples is, however, not statistically significant.

Since foreign-owned subsidiaries are in general essentially parts of large, established multinationals which are in the later stages of the corporate life cycle, these results are not surprising. Large, established firms are less likely to exhibit high growth rates and more likely to exhibit lower profits (even in the absence of transfer pricing). In table 3-1c, where we control for firm age and size, foreign-run subsidiaries continue to exhibit lower sales growth than independent Canadian firms (although the difference in profitability becomes insignificant). Unfortunately, our firm age and size variables are the age and size of the subsidiaries, not their parent multinationals. The results in table 3-1c can therefore not be taken to imply that foreign subsidiaries are growing more slowly than other firms of similar size and age. We intend to explore this issue in future research.

Seventeen of our firms are subsidiaries of other Canadian companies, and their profitability margins are given in the third panel of table 3-1a. *Financial Post*, whose ranking of the largest 550 firms in Canada we use as our starting point, lists a few Canadian owned subsidiaries separately, but consolidates others into parent firms. This makes a consistent treatment of Canadian owned subsidiaries difficult. We therefore drop these firms from our basic full sample too.

Sixty of our large Canadian firms have governments as dominant shareholders and at least some data is available for 24 of these. In the fourth panel of table 3-1a, these firms show significantly positive profitability margins. Table 3-1b shows that their profitability margins are higher than those of foreign subsidiaries both in terms of mean differences (prob > F = .01) and median differences (prob > χ^2 = .01). Crowns' profitability margins also exceed those of independent private-sector Canadian firms, again in terms of both means differences (prob > F = .01) and median differences (prob > χ^2 = .013). Table 3-1c shows that controlling for size and age does not alter this result.

Crown corporations appear to be cash cows for the governments that control them. This may be due to a public perception that governments ought to hold on to firms that make healthy profits. Governments might also confer market power on the firms they control. Perhaps most importantly, crown corporations do not face hard budget constraints. We thus exclude crown corporations from our sample on the grounds that they face constraints and objectives radically different from those faced by private sector firms.

Our basic full sample of firms thus consists of independent, private-sector Canadian firms. The bottom panel in table 3-1 compares these firms with their U.S. rivals. Our

Canadian firms are significantly lagging their U.S. rivals in terms of the median difference in operating income as a percentage of sales, but are growing faster than their U.S. industry rivals in terms of both sales increase and job creation. These relatively low income levels and high growth rates may be characteristic of younger firms.

3.5.3 Closely and Widely Held Firms

The top panel of table 3-2 reproduces the last panel of table 3-1 for comparison. The second and third panels of table 3-2 compare the characteristics of Canadian firms that do and do not have dominant shareholders. Recall we define a dominant shareholder as one who controls at least 20% of voting stock. Firms with dominant shareholders are called closely-held firms, other firms are referred to as widely held.

Firms with dominant shareholders are on average more than ten years younger than firms without dominant shareholders. Firms with dominant shareholders are also smaller - averaging only slightly over half the sales of idly-held firms. Table 3-2b shows that these differences are significant using both F-tests and Kruskal-Wallis median comparison tests.

The second panel of table 3-2a shows that firms with dominant shareholders under-perform their matching U.S. industries in terms of median difference in operating income per dollar of sales, but are growing faster than their matching U.S. industries both in terms of sales growth and in terms of job creation. In contrast, the third panel shows that widely-held Canadian firms have profitability and growth rates statistically indistinguishable from figures for their matching U.S. industries. A comparison between Canadian firms with and without dominant shareholders shows that the former have significantly lower profitability margins than the latter. Sales growth and job creation margins for the two sub-samples are

not statistically different.

In table 3-2c, where we control for firm age and size, differences in growth margins disappear, but the difference in profitability margins remains significant. This implies that closely-held Canadian firms have lower profitability margins than widely-held Canadian firms of the same size and age.

We conclude that closely-held firms are likely to be younger and smaller than widely-held firms. They tend to have lower profitability, but higher sales and job growth than their U.S. rival industries. Relatively low profits and relatively high growth are not surprising in younger firms - and the difference in growth rate does appear to be related to firm size and age. The lagging profitability of closely-held Canadian firms persists after firm age and firm size are controlled for. Widely-held Canadian firms, in contrast, have performance margins that are statistically indistinguishable from those of matching U.S. industries. This points to the possibility that Canadian firms might often remain closely-held when a widely-held ownership structure would be more amenable to improved firm performance.

3.5.4 Founders, Heirs and the Corporate Life Cycle

The number of years since a firm's inception and its size are imperfect measures of its position in the corporate life cycle. A more direct approach is to classify the firm's dominant shareholder as its founder, the founder's heirs or someone else. Information from corporate histories, proxies, the Blue Book of Canadian Business, and Who's Who allow us to determine which firms are still founder controlled, which are heir controlled, and which have had control pass from the founding family.

Table 3-3a presents a breakdown of the sample of closely-held firms into

founder-controlled firms, heir-controlled firms and firms having a dominant shareholder who is neither the founder nor his heir. We refer to the last category as firms with *non-family dominant shareholders*.

Founder-controlled firms are clearly the youngest and smallest firms. Their profitability, like that of widely-held Canadian firms, is statistically indistinguishable from the profitability of matching U.S. industries. Founder-controlled firms are growing faster than their U.S. industry rivals in both sales and work force, although the latter difference is only marginally significant.

In contrast, heir-controlled firms' median income per dollar of sales is lower than that of their U.S. industry rivals. The corresponding difference in means is in the same direction, but has only borderline significance. Heir-controlled firms, like widely-held firms, are growing at roughly the same rates as their U.S. industry rivals. Table 3-3b shows that heir-controlled firms' sales growth is also significantly lower than that of founder-controlled firms in terms of both mean differences (prob > F = .01) and median differences (prob > χ^2 = .02).

We define *closely held non-family firms* as closely-held firms where the dominant shareholder is neither the founder nor his heir. In table 3-3a, these firms show profitability levels that lag those of U.S. industry rivals. This difference is statistically significant at a ten percent confidence level when medians are compared, but is not significant when means are used. For both the median and mean comparison, the point estimates show non-family closely-held firms lagging their U.S. rivals' profitability by less than half as much as heir-run firms do.

Non-family closely-held firms, like founder-controlled firms and unlike heir-controlled firms, are growing faster than their U.S. industry rivals in terms of both sales and labor force. The magnitude of the difference is, however, less than for founder-controlled firms. Table 3-3b shows that, in terms of sales growth margins, non-family closely-held firms are significantly out-performing heir-controlled firms in terms of both mean differences (prob > $F = .01$) and median differences (prob > $\chi^2 = .01$). The job creation margins tell a similar story, but the differences are not statistically significant. The point estimates in table 3-3b also show non-family closely-held firms under-performing founder-held firms in terms of sales growth and job creation margins, but these differences are also not statistically significant.

The last set of numbers in table 3-3b suggests that widely-held firms' performance margins are higher than those of heir-run firms. These differences are of borderline statistical significance for profitability and sales growth margins, but are not significant for job creation margins.

We conclude that founder-controlled firms are growing faster than their U.S. rival industries and are no less profitable than their U.S. rival industries. In contrast, heir-held firms are growing no faster than their U.S. rivals and are trailing them in profitability. Non-family closely held firms are also lagging their rival U.S. industries in terms of profitability, although the gap is less than for heir-run firms. Non-family closely held firms have growth margins that are higher than those of heir-run firms, but lower than those of founder controlled firms. These differences suggest that founders concerned about the future performance of their firms should, upon retiring, see that control is transferred to non-family dominant shareholders or small shareholders rather than to family heirs. They also support

the argument that public policy aimed at improving the "competitiveness" of Canadian firms ought to include measures to discourage the intergenerational transfer of controlling blocks of equity.

3.5.5 Differential Voting Stock and Firm Performance

Using proxy statements, we identify firms whose dominant shareholders use dual classes of stock to hold voting control without owning a matching fraction of shares. Just over 26% of our independent firms have more than one class of common stock. In the U.S., dual class stock is less commonplace among larger firms. The AMEX stock exchange has allowed dual classes of common stock to trade. However, in 1984 only 51 firms out of the 900 traded there had dual class common stock outstanding. Until recently, the New York stock exchange had regulations that essentially prevented firms with dual class stock from becoming listed.[21]

Table 3-4a compares closely-held firms that have differential voting stock with closely-held firms that adhere to one vote per share and with widely held firms. Closely-held firms with one vote per share are roughly the same age and size as those that have differential voting, so corporate life cycle effects should not complicate their comparison. Closely-held firms with one vote per share have profit rates that are statistically indistinguishable from those of matching U.S. industries. In contrast, closely-held firms with differential voting show profit rates that lag behind those of rival U.S. industries. However, this is not clear cut proof that differential voting shares are associated with reduced profits as in table 3-2b we see that the mean and median profitability margins of the two groups are not statistically

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[21] See "Big Board Begins Review of Limits on Listed firms" *Wall Street Journal*. July 12, 1984.

significantly different from each other.

Sales growth margins for both groups are significantly positive, but those of closely-held firms with differential voting are more significant and more positive. This suggests that differential voting shares might facilitate firm growth. The evidence is not resounding, however, since in table 3-4b the sales growth margins of the two groups are not statistically significantly different from each other. Job creation margins in both groups are statistically significantly different from neither zero nor each other. Table 3-4c shows that distinctions between the performance margins of closely and widely-held firms remain insignificant when we control for firm size and age.

In table 3-4b, we also include direct statistical comparisons of the two groups of closely-held firms with widely-held firms. Firms with differential voting do have significantly lower profitability margins than widely held Canadian firms have, while one vote per share closely-held firms' profitability margins are not statistically different from those of widely held firms. We conclude that there is weak evidence that differential voting stock might facilitate faster sales growth in closely-held firms. However, this growth does not appear to involve job creation. Firms with differential voting shares do have profitability significantly below both their U.S. rival industries and one vote per share firms (whose profit rates are not significantly different their U.S. industries). This can be interpreted as weak evidence supporting the concern that differential voting shares might allow family ownership to be prolonged at the cost of reduced profits. This effect is unlikely to be related to firm size and firm age as these variables are not significantly different in the two groups.

3.5.6 Family Corporate Groups

Through the use of dual class shares and other means, a small number of Canadian families have acquired effective control over groups of large firms. For lack of a better term, we refer to these family controlled groups of firms as *family corporate groups*. We classify a firm as a member of such a group if its dominant shareholder is ultimately controlled by one of the following families: Bronfmans, Reichmanns, Thomsons, Westons, or Sobeys[22]. Other family corporate groups such as the Irvings' can not be included because key companies in the groups are privately held. Because our data sources usually consolidate figures from these firms, we have only 14 firms that we can classify as "corporate family group" controlled[23]. These 14 firms account for about 21% of the total sales of the top 550 Canadian firms.

These firms are compared with their rival U.S. industries in table 3-5a. Rival U.S. firms here are firms with SIC codes for diversified conglomerates. Canadian family corporate group firms have profit rates and job creation rates indistinguishable from those of U.S. conglomerates. Canadian family corporate group firms do have significantly positive sales growth margins, however. This may be because differential voting shares allowed some family corporate groups to grow rapidly *via* acquisitions during the 1980's. Overall, corporate family group firms are performing quite like closely-held non-family firms. Their performance margins lie between those of founder-run firms and heir-run firms. However, direct comparisons of the performance margins of family corporate group firms with the other

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[22] This information is available in Statistics Canada's *Directory of Corporate ownership*.

[23] U.S. studies of conglomerate firms suggest that Canadian family corporate groups should be expected to underperform industry rivals. Ravenscraft and Scherer (1987) and Scherer (1988) argue that a conglomerate firm structure often leads to the loss of managerial control and a breakdown of incentives.

classes of firms shown in table 3-5b show that family corporate group firms are performing no better or worse relative to matching U.S. industries than are the other categories of firms.

Table 3-5c presents regressions that control for firm size and age. An additional variable is added to distinguish firms in which family members have senior management or board positions from those in which they presumably adopt more distant oversight roles[24]. Corporate family group ownership is associated with increased profitability, however when family members are active in management, this increase is almost exactly reversed. This might be because a more active role is adopted when firm performance is poor, or it might be that such sophisticated large investors are more beneficial in an aloof oversight role rather than an active management role.

We conclude that, overall, there is no evidence that these group firms are either more or less competitive than other Canadian firms.

3.6 Conclusions

This chapter undertakes a preliminary survey of the size and incidence of large shareholdings in Canada. Large Canadian firms are much more closely held than large U.S. firms. However, Canadian firms are not on average more closely-held than U.S. firms of the same size operating in the same industries. The widely-held ownership of very large U.S. firms may be due to two factors related to the greater size and earlier industrial development of the U.S. economy:

1) Large U.S. firms are so large it is difficult for one family to own a controlling stake.

2) Large U.S. firms are often several generations old, so founding families have passed

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[24] This information is obtained from proxy statements, Who's Who and corporate and family histories.

from the scene.

Two additional possible reasons for the more widely-held ownership structure of U.S. firms stem from legal differences between the two countries may also be involved:

1) Many large U.S. firms have been the targets of anti-trust actions that have forced dominant shareholders to divest.

2) Canadian firms have greater freedom to use differential voting shares to retain a narrow ownership structure as the firm grows.

The paper undertakes a first pass at searching for relationships between existing patterns of share ownership in Canada and corporate performance relative to U.S. rivals. While Canadian firms in general trail their U.S. rivals in profitability, they appear to be growing faster than their U.S. rivals. When foreign owned subsidiaries (whose growth margins are affected by their being parts of large, mature multinationals and whose profitability margins could be reduced by transfer pricing strategies to reduce Canadian taxes) and state-owned firms (whose profits are very high, but whose objectives and constraints are quite different from those of private sector firms) are removed, these differences are more pronounced.

The profitability gap is due primarily to closely-held Canadian firms. Firms dominated by the descendants of their founders have the lowest profitability margins. Founder-owned firms do not lag their U.S. rivals' profitability, while other closely-held firms have intermediate profitability margins.

The higher growth of Canadian firms is also mainly due to the closely held sub-sample. Within this group, founder-held firms have the largest growth margins. Closely-held firms

where the dominant shareholder is an individual unrelated to the founder show lower but still significantly positive growth margins relative to U.S. rivals, while heir-run firms are barely matching the growth of their U.S. rivals.

Widely-held firms, in contrast, are matching the profitability and growth rates of their U.S. rivals.

We find weak evidence that firms using differential voting shares have both higher sales growth and lower profitability than do their U.S. rivals. In contrast, one vote per share Canadian firms are matching U.S. rivals' profits and are surpassing their sales growth by a smaller and less significant margin. This raises the possibility that differential voting stock may both facilitate the growth of closely-held firms *and* prolong the reigns of owners who provide substandard management. Since the two groups of firms are of similar age and size, corporate life cycle issues do not complicate the comparison.

We conclude that, at least in part, the large shareholdings in Canadian firms are to be expected in a younger, smaller economy. To the extent that large shareholdings reflect a more entrepreneur-run corporate sector, they ought not to be seen as a corporate governance problem. However, Canadian firms-held by their founders' heirs are performing especially poorly. This raises the possibility that differences between the U.S. and Canada that allow Canadian heirs to retain control longer might be a competitive disadvantage to Canada. The relatively lax trust busting policy and the broader use of differential voting shares in Canada are two such differences.

Fig. 3-1a: The 50 largest independent Canadian firms (by sales)

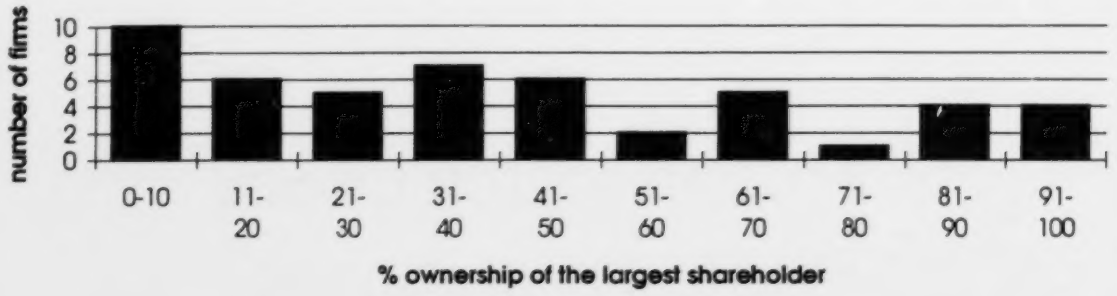

Fig. 3-1b: The 50 largest U.S. firms (by sales)

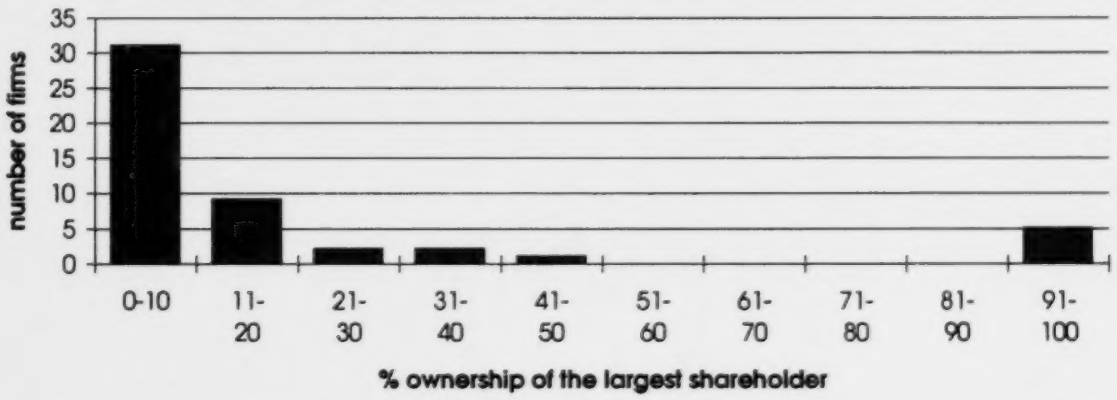

Fig. 3-1c: 50 U.S. firms matched with Canadian firms (in 3-1a) by industry and sales

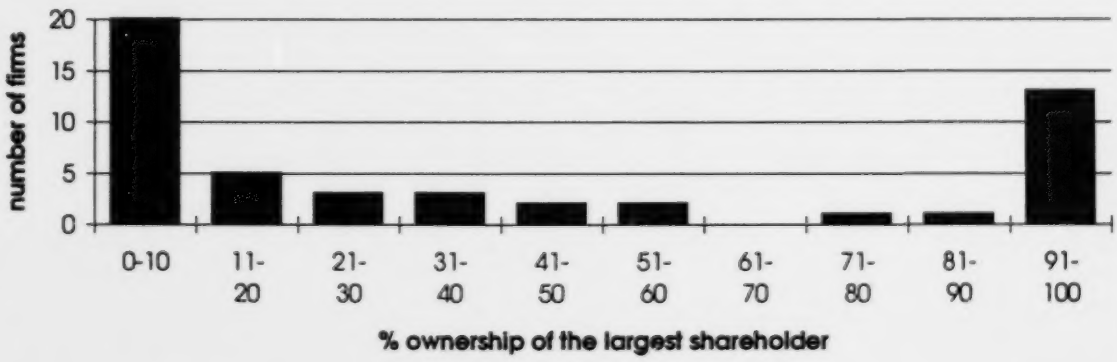

Table 3-0: UNIVARIATE STATISTICS FOR VARIABLES USED.

variable	*median*	*mean*	*standard deviation*	*minimum*	*maximum*	*sample size*
Ownership Variables						
fraction of votes held by largest shareholder	61.4%	60.1%	35.6%	0%	100%	327
fraction of dividends paid to largest shareholder	60.0%	54.7%	39.0%	0%	100%	309
Firm Performance Margins[a]						
profitability margin	-1.29%	.049%	9.17%	-33.4%	38.3%	327
sales growth margin	1.19%	3.15%	14.6%	-41.2%	80.1%	266
job creation margin	.872%	2.08%	9.68%	-17.7%	33.8%	183
Corporate Life Cycle Variables[b]						
firm age	36 yrs.	42 yrs.	31 yrs.	0 yrs.	319 yrs.	275
total sales in billions of dollars	.371	1.10	2.19	.105	19.7	327

[a]The term "margin" means that this variable is measured relative to U.S. industry performance.
[b]The logarithms of these variables are used in regressions to limit possible heteroskedasticity problems.

Table 3-1a: UNIVARIATE STATISTICS OF FIRM AGE, FIRM SIZE AND PERFORMANCE MEASURES (RELATIVE TO U.S. INDUSTRY RIVALS) BY OWNERSHIP STRUCTURE CLASSIFICATION: FOREIGN OWNED SUBSIDIARIES, CANADIAN OWNED SUBSIDIARIES, GOVERNMENT CONTROLLED FIRMS AND ALL OTHER FIRMS.

ownership structure	*firm age*[a]	*total sales*[b]	*profitability margin*[c]	*sales growth margin*[c]	*job creation margin*[c]
all Canadian firms regardless of ownership structure					
means	42.0	$1,100	.049%	3.15%	.827%
prob. > t			(.92)	(.01)	(.01)
medians	36.0	$371	-1.29%	1.19%	2.08%
prob. > S			(.03)	(.01)	(.01)
sample	275	327	327	266	183
foreign owned subsidiaries					
means	45.8	$1,127	-1.24%	.769%	1.99%
prob > t			(.12)	(.64)	(.04)
medians	39.0	$370	-2.29%	-.156%	1.94%
prob > S			(.01)	(.92)	(.06)
sample	75	106	106	65	39
Canadian owned subsidiaries[d]					
means	31.8	$1,023	1.63%	2.67%	-2.57%
prob. > t			(.45)	(.43)	(.24)
medians	25.0	$434	-1.28%	1.15%	-3.13%
prob. > S			(.85)	(.27)	(.36)
sample	14	17	17	14	9
crown corporations					
means	46.3	$1,196	6.14%	1.65%	1.00%
prob. > t			(.10)	(.42)	(.48)
medians	41.0	$572	5.06%	2.78%	-.117%
prob. > S			(.05)	(.15)	(.67)
sample	18	24	24	22	20
independent private-sector firms (basic full sample)					
means	41.4	$1,087	-.154%	4.33%	2.66%
prob > t			(.80)	(.01)	(.01)
medians	34.0	$367	-1.20%	1.75%	.661%
prob > S			(.02)	(.01)	(.09)
sample	168	180	180	165	115

The numbers in parentheses are probability levels. Below means, they are for standard t-tests, and below medians they are for signed rank tests.

[a]Years since date of first incorporation
[b]1989 figures given in millions of dollars.
[c]Medians of annual observations in 1984, 1985, 1986, 1987, 1988 and 1989. The term "margin" means these variables are relative to U.S. rival industry performance.
[d]Only consolidated figures are available so the number of firms is low.

Table 3-1b: PROBABILITY LEVELS FROM TESTS FOR STATISTICAL DIFFERENCES BETWEEN SUBSAMPLES LISTED ABOVE.

	firm age[a]	*total sales*[b]	*profitability margin*[c]	*sales growth margin*[c]	*job creation margin*[c]
Independent private sector firms vs. foreign owned subsidiaries					
F-test for comparison of means					
prob. > F	.32	.88	.27	.11	.72
χ^2 approximation to the Kruskal-Wallis test for comparison of medians					
prob. > χ^2	.05	.64	.11	.10	.69
Independent private sector firms vs. crown corporations					
F-test for comparison of means					
prob. > F	.55	.80	.01	.44	.52
χ^2 approximation to the Kruskal-Wallis test for comparison of medians					
prob. > χ^2	.20	.24	.01	.70	.80
Crown corporations vs. foreign owned subsidiaries					
F-test for comparison of means					
prob. > F	.93	.90	.01	.77	.55
χ^2 approximation to the Kruskal-Wallis test for comparison of medians					
prob. > χ^2	.83	.33	.01	.34	.34

Table 3-1c: O.L.S. REGRESSIONS OF FIRM PERFORMANCE RELATIVE TO RIVAL U.S. INDUSTRIES ON FIRM AGE AND SIZE CONTROL VARIABLES AND OWNERSHIP STRUCTURE DUMMIES: FOREIGN OWNED SUBSIDIARIES, CANADIAN OWNED SUBSIDIARIES, GOVERNMENT CONTROLLED FIRMS RELATIVE TO INDEPENDENT PRIVATE SECTOR FIRMS.

independent variable	*profitability margin*	*sales growth margin*	*job creation margin*
intercept	-.0356	.177	.162
	(.70)	(.23)	(.17)
log of firm age	-.00441	-.0523	-.0300
	(.52)	(.01)	(.01)
log of total sales	.00272	.00240	-.0013
	(.59)	(.76)	(.84)
foreign owned subsidiary	-.0132	-.0377	-.00534
indicator variable	(.28)	(.08)	(.76)
domestically owned subsidiary	-.00594	-.0445	-.0548
indicator variable	(.82)	(.28)	(.12)
crown corporation	.0980	.000729	-.0146
indicator variable	(.01)	(.98)	(.56)
R^2	.0846	.114	.0753
sample size	274	239	175

Table 3-2a: UNIVARIATE STATISTICS OF FIRM AGE, FIRM SIZE AND PERFORMANCE MEASURES (RELATIVE TO U.S. INDUSTRY RIVALS) BY OWNERSHIP STRUCTURE CLASSIFICATION: ALL FIRMS, CLOSELY HELD FIRMS AND WIDELY HELD FIRMS.

ownership structure	*firm age*[a]	*total sales*[b]	*profitability margin*[c]	*sales growth margin*[c]	*job creation margin*[c]
independent private sector firms (basic full sample)					
means	141.4	$1,087	-.154%	4.33%	2.66%
prob. > t			(.80)	(.01)	(.01)
medians	134.0	$367	-1.20%	1.75%	.661%
prob. > S			(.02)	(.01)	(.09)
sample	168	180	180	165	115
closely-held firms					
means	37.6	$835	-.893%	4.51%	3.17%
prob. > t			(.13)	(.01)	(.02)
medians	29.0	$312	-1.65%	3.09%	1.79%
prob. > S			(.01)	(.01)	(.07)
sample	119	124	124	115	77
widely-held firms					
means	50.7	$1,643	1.48%	3.90%	1.64%
prob. > t			(.28)	(.13)	(.34)
medians	51.0	$570	-1.01%	-.060%	-.077%
prob. > S			(.63)	(.48)	(.81)
sample	49	56	56	50	38

The numbers in parentheses are probability levels. Below means, they are for standard t-tests, below medians they are for signed rank tests.

[a]years since date of first incorporation
[b]1989 figures given in millions of dollars.
[c]medians of annual observations in 1984, 1985, 1986, 1987, 1988 and 1989.

Table 3-2b: PROBABILITY LEVELS FROM TESTS FOR STATISTICAL DIFFERENCES BETWEEN SUBSAMPLES LISTED ABOVE.

	firm age[a]	*total sales*[b]	*profitability margin*[c]	*sales growth margin*[c]	*job creation margin*[c]
closely-held vs. widely-held firms					
F-test for comparison of means					
prob. > F	.02	.01	.06	.82	.50
χ^2 approximation to the Kruskal-Wallis test for comparison of medians					
prob. > χ^2	.01	.01	.16	.46	.51

Table 3-2c: O.L.S. REGRESSIONS OF FIRM PERFORMANCE RELATIVE TO RIVAL U.S. INDUSTRIES ON FIRM AGE AND SIZE CONTROL VARIABLES AND OWNERSHIP STRUCTURE DUMMY FOR CLOSELY HELD FIRM IN INDEPENDENT FIRMS SUBSAMPLE.

independent variable	*profitability margin*	*sales growth margin*	*job creation margin*
intercept	-.0695	.189	.184
	(.53)	(.39)	(.31)
log of firm age	.00077	-.0726	-.0488
	(.92)	(.01)	(.01)
log of total sales	-.00244	.00609	.00107
	(.67)	(.59)	(.91)
closely-held firm	-.0277	-.0240	-.00514
indicator variable	(.04)	(.39)	(.83)
R^2	.0246	.137	.104
sample size	168	157	111

Table 3-3a: UNIVARIATE STATISTICS OF FIRM AGE, FIRM SIZE AND PERFORMANCE MEASURES (RELATIVE TO U.S. INDUSTRY RIVALS) BY OWNERSHIP STRUCTURE CLASSIFICATION: FIRMS CONTROLLED BY FOUNDERS, THEIR HEIRS, OTHER DOMINANT SHAREHOLDERS AND NO DOMINANT SHAREHOLDER.

ownership structure	*firm age*[a]	*total sales*[b]	*profitability margin*[c]	*sales growth margin*[c]	*job creation margin*[c]
closely-held firms held by their founders					
means	23.1	$437	-.654%	10.3%	7.05%
prob > t			(.53)	(.01)	(.10)
medians	22.0	$228	-1.27%	5.16%	6.77%
prob > S			(.45)	(.03)	(.11)
sample	28	29	29	26	15
closely-held firms held by their founders' heirs					
means	42.5	$738	-1.51%	-1.56%	.894%
prob. > t			(.12)	(.42)	(.70)
medians	38.0	$383	-2.47%	-.646%	-.200%
prob. > S			(.06)	(.47)	(.99)
sample	35	36	36	35	26
closely-held firms held by neither founders nor heirs					
means	41.6	$1,090	-.632%	5.66%	3.19%
prob. > t			(.53)	(.01)	(.06)
medians	33.5	$234	-1.13%	4.90%	2.90%
prob. > S			(.09)	(.01)	(.09)
sample	56	59	59	54	36

The numbers in parentheses are probability levels. Below means, they are for standard t-tests, and below medians they are for signed rank tests.

[a]years since date of first incorporation.
[b]1989 figures given in millions of dollars.
[c]medians of annual observations in 1984, 1985, 1986, 1987, 1988 and 1989.

Table 3-3b: PROBABILITY LEVELS FROM TESTS FOR STATISTICAL DIFFERENCES BETWEEN SUBSAMPLES LISTED ABOVE.

	firm age[a]	*total sales*[b]	*profitability margin*[c]	*sales growth margin*[c]	*job creation margin*[c]
firms dominated by founders vs. firms dominated by their heirs					
F-test for comparison of means					
prob. > F	.01	.11	.54	.01	.16
χ^2 *approximation to the Kruskal-Wallis test for comparison of medians*					
prob. > χ^2	.01	.02	.63	.02	.24
firms dominated by heirs vs. closely-held non-family firms					
F-test for comparison of means					
prob. > F	.91	.34	.55	.01	.40
χ^2 *approximation to the Kruskal-Wallis test for comparison of medians*					
prob. > χ^2	.46	.09	.72	.01	.33
firms dominated by founders vs. closely-held non-family firms					
F-test for comparison of means					
prob. > F	.03	.10	.99	.21	.29
χ^2 *approximation to the Kruskal-Wallis test for comparison of medians*					
prob. > χ^2	.01	.59	.71	.55	.52
firms dominated by heirs vs. widely-held firms (see table 3-2)					
F-test for comparison of means					
prob. > F	.21	.06	.11	.11	.79
χ^2 *approximation to the Kruskal-Wallis test for comparison of medians*					
prob. > χ^2	.24	.17	.14	.26	.77

Table 3-3c: O.L.S. REGRESSIONS OF FIRM PERFORMANCE RELATIVE TO RIVAL U.S. INDUSTRIES ON FIRM AGE AND SIZE CONTROL VARIABLES AND OWNERSHIP STRUCTURE DUMMIES FOR FOUNDER AND HEIR AS DOMINANT SHAREHOLDER IN CLOSELY-HELD FIRMS SUBSAMPLE.

independent variable	*profitability margin*	*sales growth margin*	*job creation margin*
intercept	-.00387 (.97)	-.0811 (.74)	.201 (.38)
log of firm age	-.00823 (.29)	-.0485 (.01)	-.0334 (.12)
log of total sales	.00164 (.77)	.0151 (.26)	-.00268 (.83)
founder-run firm indicator variable	-.00559 (.71)	.0327 (.34)	-.0300 (.41)
heir-run firm indicator variable	-.0132 (.33)	-.0661 (.04)	-.0195 (.52)
R^2	.0197	.145	.0786
sample size	119	113	76

Table 3-4a: UNIVARIATE STATISTICS OF FIRM AGE, FIRM SIZE AND PERFORMANCE MEASURES (RELATIVE TO U.S. INDUSTRY RIVALS) BY OWNERSHIP STRUCTURE CLASSIFICATION: CLOSELY HELD FIRMS WITH ONE VOTE PER SHARE, CLOSELY HELD FIRMS WITH DIFFERENTIAL VOTING, AND WIDELY HELD FIRMS.

	firm age[a]	*total sales*[b]	*profitability margin*[c]	*sales growth margin*[c]	*job creation margin*[c]
closely-held firms with one vote per share					
means	34.3	$854	-.546%	4.11%	3.90%
prob > t			(.45)	(.08)	(.11)
medians	27.0	$222	-.231%	1.17%	1.79%
prob > S			(.49)	(.23)	(.32)
sample	48	48	48	45	29
closely-held firms with differential voting stock					
means	32.9	$632	-1.24%	4.26%	2.46%
prob. > t			(.13)	(.05)	(.23)
medians	28.0	$354	-2.60%	6.11%	0.00%
prob. > S			(.02)	(.02)	(.44)
sample	48	49	49	46	31
widely-held firms					
means	50.7	$1,643	1.48%	3.90%	1.64%
prob. > t			(.28)	(.13)	(.34)
medians	51.0	$570	-1.01%	-.060%	-.077%
prob. > S			(.63)	(.48)	(.81)
sample	49	56	56	50	38

The numbers in parentheses are probability levels. Below means, they are for standard t-tests, and below medians they are for signed rank tests.

[a]years since date of first incorporation.
[b]1989 figures given in millions of dollars.
[c]medians of annual observations in 1984, 1985, 1986, 1987, 1988 and 1989.

Table 3-4b: PROBABILITY LEVELS FROM TESTS FOR STATISTICAL DIFFERENCES BETWEEN SUBSAMPLES LISTED ABOVE.

	firm age[a]	*total sales*[b]	*profitability margin*[c]	*sales growth margin*[c]	*job creation margin*[c]
closely-held firms with one vote per share vs. closely-held firms with differential voting					
F-test for comparison of means					
prob. > F	.76	.44	.52	.96	.64
χ^2 approximation to the Kruskal-Wallis test for comparison of medians					
prob. > χ^2	.85	.18	.16	.48	.77
closely-held firms with differential voting shares vs. widely-held firms					
F-test for comparison of means					
prob. > F	.01	.01	.10	.92	.75
χ^2 approximation to the Kruskal-Wallis test for comparison of medians					
prob. > χ^2	.01	.01	.04	.36	.93
closely-held firms with one vote per share vs. widely-held firms					
F-test for comparison of means					
prob. > F	.01	.09	.21	.95	.43
χ^2 approximation to the Kruskal-Wallis test for comparison of medians					
prob. > χ^2	.01	.01	.74	.79	.55

Table 3-4c: O.L.S. REGRESSIONS OF FIRM PERFORMANCE RELATIVE TO RIVAL U.S. INDUSTRIES ON FIRM AGE AND SIZE CONTROL VARIABLES AND OWNERSHIP STRUCTURE DUMMIES FOR FIRMS WITH DIFFERENTIAL VOTING SHARES IN CLOSELY-HELD FIRMS SUBSAMPLE.

independent variable	*profitability margin*	*sales growth margin*	*job creation margin*
intercept	-.00418 (.97)	-.0277 (.91)	.228 (.33)
log of firm age	-.00863 (.26)	-.0571 (.01)	-.0373 (.08)
log of total sales	.00141 (.81)	.0128 (.35)	-.00316 (.80)
differential voting shares indicator variable	.00191 (.87)	.0153 (.58)	-.00893 (.74)
R^2	.0117	.0875	.0581
sample size	119	113	76

Table 3-5a: UNIVARIATE STATISTICS OF FIRM AGE, FIRM SIZE AND PERFORMANCE MEASURES (RELATIVE TO U.S. INDUSTRY RIVALS) BY OWNERSHIP STRUCTURE CLASSIFICATION: CONTROL BY LARGE FAMILY CORPORATE GROUP, OTHER FAMILY CONTROLLED FIRMS, OTHER CLOSELY HELD FIRMS AND WIDELY HELD FIRMS.

	firm age[a]	*total sales*[b]	*profitability margin*[c]	*sales growth margin*[c]	*job creation margin*[c]
firms controlled by a large family corporate group[d]					
means	69.0	$3,252	1.22%	4.97%	2.83%
prob > t			(.67)	(.03)	(.29)
medians	60.0	$2,427	-1.75%	5.98%	3.11%
prob > S			(.43)	(.05)	(.38)
sample	114	14	14	14	10
all other family controlled firms					
means	39.0	$594	-1.46%	2.81%	3.09%
prob. > t			(.06)	(.15)	(.12)
medians	36.0	$346	-2.21%	1.75%	2.60%
prob. > S			(.03)	(.18)	(.20)
sample	49	50	50	47	35
closely-held non-family firms					
means	28.4	$472	-.911%	5.88%	3.36%
prob. > t			(.28)	(.02)	(.16)
medians	27.0	$224	-1.28%	2.32%	3.22%
prob. > S			(.20)	(.05)	(.26)
sample	60	60	60	54	32
widely-held firms					
means	50.7	$1,643	1.48%	3.90%	1.64%
prob. > t			(.28)	(.13)	(.34)
medians	51.0	$570	-1.01%	-.060%	-.077%
prob. > S			(.63)	(.48)	(.81)
sample	49	56	56	50	38

The numbers in parentheses are probability levels. Below means, they are for standard t-tests, and below medians they are for signed rank tests.

[a]years since date of first incorporation.
[b]1989 figures given in millions of dollars.
[c]medians of annual observations in 1984, 1985, 1986, 1987, 1988 and 1989.
[d]only consolidated figures are available so the number of firms is low.

Table 3-5b: PROBABILITY LEVELS FROM TESTS FOR STATISTICAL DIFFERENCES BETWEEN SUBSAMPLES LISTED ABOVE.

	firm age[a]	*total sales*[b]	*profitability margin*[c]	*sales growth margin*[c]	*job creation margin*[c]
firms controlled by a large family corporate group vs. all other family controlled firms					
F-test for comparison of means					
prob. > F	.02	.01	.19	.56	.94
χ^2 *approximation to the Kruskal-Wallis test for comparison of medians*					
prob. > χ^2	.10	.01	.92	.46	.99
firms controlled by a large family corporate group vs. closely-held non-family firms					
F-test for comparison of means					
prob. > F	.01	.01	.33	.85	.90
χ^2 *approximation to the Kruskal-Wallis test for comparison of medians*					
prob. > χ^2	.01	.01	.99	.50	.84
firms controlled by a large family corporate group vs. widely-held firms					
F-test for comparison of means					
prob. > F	.19	.06	.93	.83	.74
χ^2 *approximation to the Kruskal-Wallis test for comparison of medians*					
prob. > χ^2	.63	.05	.53	.26	.45
all other family controlled firms vs. closely-held non-family firms					
F-test for comparison of means					
prob. > F	.01	.39	.63	.33	.93
χ^2 *approximation to the Kruskal-Wallis test for comparison of medians*					
prob. > χ^2	.03	.26	.70	.61	.88
all other family controlled firms vs. widely-held firms					
F-test for comparison of means					
prob. > F	.05	.01	.07	.73	.57
χ^2 *approximation to the Kruskal-Wallis test for comparison of medians*					
prob. > χ^2	.07	.01	.15	.78	.43
closely-held non-family firms vs. widely-held firms					
F-test for comparison of means					
prob. > F	.01	.01	.13	.57	.54
χ^2 *approximation to the Kruskal-Wallis test for comparison of medians*					
prob. > χ^2	.01	.01	.32	.51	.91

Table 3-5c: O.L.S. REGRESSIONS OF FIRM PERFORMANCE RELATIVE TO RIVAL U.S. INDUSTRIES ON FIRM AGE AND SIZE CONTROL VARIABLES AND OWNERSHIP STRUCTURE DUMMIES FOR FIRMS IN LARGE FAMILY CORPORATE GROUPS AND FIRMS IN THOSE GROUPS WHERE FAMILY MEMBERS ARE ACTIVELY INVOLVED IN MANAGEMENT.

independent variable	*profitability margin*	*sales growth margin*	*job creation margin*
intercept	.0277 (.81)	.0588 (.84)	.264 (.31)
log of firm age	-.0110 (.15)	-.0580 (.01)	-.0399 (.07)
log of total sales	-.00009 (.99)	.00885 (.57)	-.00493 (.73)
family corporate group indicator variable	.0540 (.03)	.0170 (.77)	.0424 (.46)
active management indicator variable	-.0680 (.05)	.0248 (.76)	-.0324 (.67)
R^2	.0609	.0883	.0641
sample size	119	113	76

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Appendix: Types of Antitakeover Devices

A.1 Shareholder-approved antitakeover devices

Seven types of shareholder-approved antitakeover devices are identified. In general, these devices result in amendments to the corporation's charter. While it is possible that charter amendments may be approved with a simple majority, it is usually the case that a simple majority is not sufficient to approve subsequent changes -- the corporate charter is then said to be locked-up or locked-in. Without a lock-up or lock-in provision, it would be possible for a party to acquire control of a majority of the firm's voting rights and eliminate the antitakeover amendment.

A.1.1 Classified board of directors

A classified board of directors is one where a proportion (usually one third) of the directors is elected each year. Having staggered elections increases the time required to change control of the board of directors. In addition, if the firm's voting system is cumulative, a classified board makes it more difficult for a minority group to elect any directors.

Often accompanying classified board amendments are amendments that restrict the ability to increase the number of positions on the board. Supermajority shareholder approval may be required to increase the number of positions on the board.

A.1.2 Supermajority rules

Supermajority rules require that greater than a simple majority of votes is required to pass or amend some corporate policy. The range of required shareholder approval percentages is usually between 66% and 80%. So that current firm management is not

constrained by supermajority rules, additional clauses are often included that allow current (continuing) directors to approve certain actions or changes without supermajority approval.

A.1.2.1 Supermajority approval of mergers, consolidations, or major asset sales

As the subtitle implies, supermajority shareholder approval may be required to approve mergers (except with subsidiaries), consolidations, or major asset sales. Typically this type of supermajority rule is only applied if the proposed transaction is with a stockholder who owns at least 5% of the firm.

A.1.2.2 Supermajority shareholder approval for the removal of directors

While some corporate charters specify that directors can be removed only for just cause, this type of supermajority rule requires that even if just cause conditions have been satisfied, a supermajority of the votes must be cast in favour of removing the director. Thus, even if a bidder were to acquire a majority of the firm's stock, it could not easily replace the incumbent board of directors.

A.1.3 Fair-price amendments

When a fair-price amendment is in effect, supermajority, or board approval of takeovers is required unless the acquirer offers to pay a fair price for all shares being sought. There are a variety of types of fair-price amendments. The most common form stipulates the fair price to be the maximum share price paid by the acquirer over a certain time period. Another variation requires the bidder to pay a premium over market price for the current offer that is at least as high as the highest premium paid over market price during the time in which the bidder acquired its current holdings of the target's stock. Other types of fair-price amendments link the fair price to a multiple of target's earnings, dividends, or book value.

Fair price amendments are primarily designed to prevent hostile two-tier tender offers in which the bidder pays a high premium for a controlling stake of the target's shares and then pays a reduced price for the remainder of the shares required to complete a merger.

A.1.4 Limitation of shareholder rights

These types of charter amendments generally prohibit shareholders from successfully acting in a way that surprises the current board of directors. Charter amendments that limit the rights of shareholders include the following: eliminate the right to act by written consent, eliminate the right to call special meetings without board approval, eliminate the right to remove board members without establishing cause, eliminate the right to nominate candidates for the board unless a notification period has been satisfied. The effect of these amendments is that changes cannot be conducted outside the regular (or board approved) shareholder meetings and the board is aware of what changes may be proposed during shareholder meetings.

A.1.5 Dual-class recapitalizations

Voting control is concentrated in the hands of corporate insiders through the use of dual-class recapitalizations. Two classes of common stock are issued: low-vote stock and high-vote stock. Low-vote stock generally receives a higher dividend and shareholders are either allowed to exchange one-for-one the high- vote stock for the low-vote stock or the firm offers to repurchase the high-vote stock. To make it less desirable, owners of high-vote stock may be restricted in the parties with whom the shares may be traded. Another type of restriction may limit the voting rights of shares that are traded frequently; only shares held for a long time period may be entitled to high- vote status. Because of the higher dividend of the

low-vote stock and the restrictions on the high-vote stock, public shareholders have an incentive to divest of the high-vote stock and hold the low-vote stock. Corporate insiders maintain (and perhaps increase) their ownership of high-vote stock and thus control a disproportionately large percentage of the voting control of the firm compared to their percentage equity holdings.

A.1.6 Authorization of preferred stock

Authorization to issue preferred stock with special voting or conversion features may be a strong deterrent to hostile takeovers. With the authorization, if threatened by a hostile takeover, a target's management has the ability to create poison pills (see below) or issue high-vote or convertible-preferred stock to friendly parties.

A.1.7 Elimination of cumulative voting

Reverting to a majority voting systems ensures that if the board is able to control over 50% of the firm's voting rights, then it can determine the outcome for the election of all board members. Compared to a cumulative voting system, it is more difficult for a dissident group to elect any candidates to the board. Under a cumulative voting system, a shareholder gets a total number of votes equal to the number of shares owned multiplied by the number of positions up for election. A dissident group may allocate all votes to the capturing of one or a few seats on the board of directors. Under a majority voting system, there is a different limit to the number of votes a shareholder can cast for one position. This limit is simply the number of shares possessed (assuming one vote per share).

A.2. Non-shareholder-approved antitakeover devices

Four non-shareholder-approved antitakeover devices are identified. These methods typically involve management's discretionary use of legal challenges, investment changes, or previously authorized financing changes.

A.2.1 Greenmail

Targeted block repurchases (or greenmail) arise when target management offers to buy back shares of stock at a premium from a hostile suitor. The hostile suitor generally profits from such a transaction and is required to enter into a standstill agreement. The target firm may use surplus cash to facilitate the share repurchase, but more likely, the firm is forced to finance the repurchase with new debt.

A.2.2 Standstill agreements

A standstill agreement is an agreement by a hostile suitor not to undertake further activities that could be construed as leading to the takeover of a particular target. Typically such an agreement limits the suitor's holdings of the target's shares for a certain time period (e.g. ten years). Standstill agreements are usually made alongside greenmail payments or the termination of legal suits raised by the target. Other terms that may be included in standstill agreements are as follows: limitations on proxy solicitation, limitations on sale of shares to other parties.

A.2.3 Poison pills

Poison pills consist of a group of securities that, given some triggering event, either reduce the value of a large-block holder's equity or dilute the voting control of a large-block holder. The triggering event is usually the accumulation by a hostile suitor of a

certain percentage (20% - 50%) of the target firm's voting stock. Other triggering events include tender offer announcements or merger announcements. Poison pill securities are usually redeemable by target management at a trivial cost until shortly after the triggering event. Thus, if target management approves of a proposed takeover or merger, the poison pill defence may be easily removed. The specific features of poison pills vary from firm to firm; five general categories can be identified and are summarized below.

A.2.3.1 Preferred stock plans

A convertible-preferred stock is issued through a stock dividend to common stock holders. The preferred stock has voting rights equal to common stock and has dividends higher than the dividends received should the preferred be converted. If a party obtains a substantial amount of the firm's voting stock, the preferred stock becomes redeemable (except for the large-block holder) for the cash amount equal to the greater of the following: the highest amount paid by the acquirer (over some time period, e.g., one year) for preferred stock; or the highest amount paid by the acquirer for the target's common stock, multiplied by the conversion ratio. If the acquirer acts to divest assets from, merge, or reorganize the target, but does not purchase all preferred stock outstanding, the redemption feature vanishes, instead the preferred stock becomes convertible into voting securities of the acquirer.

The target board may modify or eliminate any of the redemption or conversion features of the preferred stock as long as the initial triggering event has not occurred. If, however, the triggering event has occurred, then supermajority approval (by preferred shareholders) of changes to the preferred stock is required.

A.2.3.2 Flip-over plans

Flip-over plans consist of rights issued as a dividend to common stock holders. The rights allow for the purchase of common or preferred stock of the issuing firm at an exercise price substantially higher than the market price at the time of issue. The issuing firm can call the rights for a trivial price. If an outside party acquires a large stake of the issuing firm's voting stock, then the rights become detachable from the common stock and the issuing firm can no longer call the rights. If the large-block holder acts to sell assets from, reorganize, or merge the target, then the rights can be exercised for shares of the acquirer worth more than the exercise price (ranging from 2 to 10 times the value of the exercise price). If transactions with the target are conducted such that the large-block holder receives preferential treatment, then all but the large-block holder's rights become valid. Flip-over plans result in dilution of the holdings of the acquirer and thus extremely costly takeovers.

A.2.3.3 Flip-in plans

Similar to flip-over plans, flip-in plans allow rights holders to buy (at a discount) shares of the issuing firm's stock if some party acquires a substantial stake in the firm. When a party passes a threshold level of ownership, its rights are deemed void and the flip-in plan is triggered. Flip-in plans give additional protection when combined with flip-over plans. With a flip-over plan in place, an acquirer may purchase a majority of the issuing firm's stock, take control of the board of directors, and wait for the rights to expire (although this may take up to ten years) before merging the firms. With this type of strategy the ability to exercise rights to purchase the acquirer's stock at a discount (the flip-over) is never triggered. However, the flip-in plan will be triggered as soon as the acquirer passes the ownership

threshold.

A.2.3.4 Back-end plans

Back-end plans are designed to eliminate two-tier tender offers. Similar to flip-in plans, back-end plans give the issuing firm's common stock holders (except the acquirer) the right to exchange common stock for cash or other securities equal to some prescribed back-end price determined by the board and specified in the rights agreement. Back-end plans are triggered when an acquirer passes some ownership limit. The right to exchange the common stock ends if the acquirer offers to purchase the remaining shares for a value greater than or equal to the back-end price.

A.2.3.5 Voting plans

Voting plans, like preferred stock plans, consist of an issue of special preferred stock to common stock holders. While the issuing firm's common stock may entitle its holder to one vote, each share of preferred stock gives its holder a large number of votes (e.g. 50). If a shareholder owns more than some specified proportion of the issuing firm's stock, then that shareholder's preferred stock loses its votes. Thus, even if an acquirer is able to purchase 100% of a firm's common stock, voting control is not achieved.

A.2.4 Defensive restructurings

Defensive restructurings involve the purchase or sale of assets or securities that either make a takeover difficult or unattractive. Defensive restructurings typically are implemented after a particular takeover threat is identified. The type of defensive restructuring is often tailored to the circumstances of a specific situation. Defensive restructurings include the following: purchase assets that, if acquired, will cause antitrust

problems for the bidder; purchase (or threaten to purchase) a controlling interest in the hostile suitor; sell to another party the particular assets most desirable to the bidder (sell the crown jewels); exhaust cash reserves by purchasing assets unrelated to (or unwanted by) the bidder; purchase new assets using voting stock as payment; privately place voting stock with a friendly party; conduct a self tender offer for publicly held voting shares; dilute a financially constrained bidder's holdings by issuing new securities.

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Graduate Faculty Fellowship, University of Alberta, 1988.
Faculty of Business Ph.D. Awards, University of Alberta, 1987, 1988, 1989, 1990.
Province of Alberta, Minister of Advanced Education Certificates of Merit, 1983-1986.
First Class Honours, University of Alberta, 1982-1986.
Matriculation Award, University of Alberta, 1982.
Alexander Rutherford Scholarship, 1982.

Employment Record:

Assistant Professor of Finance, University of Manitoba, Winnipeg, Manitoba, Canada: 1 July 1991 to present.

Sessional Lecturer, University of Alberta, Edmonton, Alberta, Canada: 1990-91.

Lecturer (part time), University of Alberta, Edmonton, Alberta, Canada: 1988-90.

Research Assistant, University of Alberta, Edmonton, Alberta, Canada: 1986-90.

Publications:

"The Valuation of Forestry Resources Under Stochastic Prices and Inventories", co-authored with Randall Morck and Eduardo Schwartz, *Journal of Financial and Quantitative Analysis*, Vol.24, No. 4, December 1989, pp. 473-488.

Working Papers:

"Corporate Performance and Large Shareholders", co-authored with Randall Morck.

"Unsuccessful Takeover Attempts and the Effect on Target-Firm Operating Performance"

"The Effects of Antitakeover Devices on Firm Performance"

Presentations at Professional Meetings:

"The Valuation of Forestry Resources Under Stochastic Prices and Inventories", co-authored with Randall Morck and Eduardo Schwartz, presented at the University of Alberta Institute for Financial Research, 1989, and the Northern Finance Association 1st Annual Meeting, Ottawa, Canada, 1989.

"The Effects of Unsuccessful Takeovers on Target-Firm Performance", presented at the FMA Doctoral Student Seminar, Orlando, Florida, 1990.

Presentations at Professional Meetings: (continued)

"A Summary of Unsuccessful Takeover Attempts and Their Effects on Target-Firm Operating Performance", presented at the ASAC 1991 Conference, Niagara Falls, Ontario.

Discussant of "Economic Downturns and the Undoing of Conglomeration", at the Northern Finance Association Meeting held in Halifax, Nova Scotia, 1993.

Service and Other Scholarly Activities:

One of twenty-five participants selected from North American graduate students in business to attend the 1989 Investment Banking Consortium, Institute for U.S.-Canada Business Studies, Pace University, New York, NY.

Applied for and received grant from the University of Manitoba Research Grants Committee (1992) to study mergers and acquisitions (with H. Pratt, M. Swartz, and H. Turtle).

Coordinator for seven sections of introductory corporate finance course (9.220) in second term of 1991-92.

Member of Finance Curriculum Committee, 1991-present.

Member of Finance Ph.D. Committee, 1991-present.

Member of Accounting and Finance Research Centre Planning and Priorities Committee, 1991-present.
-Coordinator for *COMPUSTAT* data base.

Member of Department of Accounting and Finance Committee on the Allocation of Teaching Assistant Resources, 1992.

Designed two new courses for the Finance curriculum (1993-94):
9.348: Corporate Finance Theory and Practice
9.426: Advanced Finance Theory

Member of the Undergraduate Program Committee, 1993-present.

Faculty advisor to the Commerce Students' Association, 1993-present.